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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

THE ARMY AND NAVY NEED YOU

Following the declaration of war Congress amended the Selective Service Act, calling for registration of every man up to sixty-five years and making those under forty-five subject to the order of Selective Service. Thus it is said some 60,000 physicians become available for service under direction of the Procurement and Assignment Service, which is empowered to select the necessary personnel to procure needed medical and surgical service from this existing number of physicians. Beside supplying the needs of the armed forces, they may be assigned to necessary services for civilian communities, public health agencies, industrial plants and other needs.

In each community local committees will provide accurate information regarding the status of each member of the profession concerned. Those offering their services are subject to assignment according to their qualifications. A physician called by the Selective Service who has not enrolled, or who is not on the reserve list, will serve without commission during the time that necessarily elapses before a commission is secured.

The modern expression, "total war," indicates an involvement of the population and total resources of the country scarcely imagined or even dreamed of a few years ago and far beyond any experience at the time of World War I. This necessity for employment of the total resources of the nation will undoubtedly necessitate considerable dislocation of rather large elements of the population and it is anticipated that a heavy percentage of practicing medical men may have to be detached from their present positions. It is hoped that volunteers will supply most of the military requirement and drafting of physicians for their service may not be necessary. These provisions and this planning may seem drastic or even fantastic, but no one can foretell what events of the future may change our opinion on these matters. In the meantime let us be ready to serve as we are needed.

In order that as many physicians as possible may be obtained by voluntary enrollment, a form of application is herewith presented which it is urged upon all physicians to fill out and send to Dr. Sam F. Seeley, Executive Director of the Procurement and Assignment Service as soon as it is possible for them to do so.

CIVILIAN DEFENSE

Following the destructive attack on Pearl Harbor and Honolulu, the immediate reaction of our Pacific Coast states was one of anxiety and expectation that a similar bombing might be launched against our cities. During the night of December 7 there were universal efforts for a blackout with widespread apprehension. Although this was nowhere perfectly executed, during following nights experience increased to the extent of obtaining quite satisfactory results. While fear of bombing attacks decreased, the necessity for preparation of defense measures was thoroughly realized. Oregon and Washington are considered especially vulnerable on account of their nearness to Japan, Puget Sound being a thousand miles less distant than San Francisco. Thus far, however, the menace against that city has been the most acute on account of its location on the ocean coast.

During the past two weeks reports from all our coast cities have demonstrated defensive measures already instituted, the same being put into effect to a lesser degree in the eastern sections of our states. When the menace first appeared almost no hospital beds were available for immediate emergency. For example, it was stated that only fifty were ready for immediate use in Seattle, while ten days later it was announced that all hospitals had extended their facilities so that five hundred beds will be available, if necessity for them arises. In all the cities it is reported that the hospitals have perfected emergency staffs of physicians and nurses, with ambulances and other equipment prepared for possible needs. In Seattle the Red Cross equipped a complete mobile operating room unit, with all possible necessities provided, housed in the basement of Civic Auditorium and so arranged that it could be set up for use in a few hours in any location where needed. Like plans are made in other cities. Rules and regulations for conduct of citizens have been published. It seems, indeed, that foresight has prepared the people for defensive measures which may be instituted at once if an attack should occur.

As a suggestion for effective organization to meet emergency medical needs, the attached schedule has been prepared which shows the general arrangements designed to meet conditions which might fol-

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ENROLLMENT FORM FOR PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS

Dr. Sam F. Seeley, Executive Officer
Procurement and Assignment Service
New Social Security Building
4th and C Streets S. W.
Washington, D. C.

Dear Dr. Seeley:

Please enroll my name as a physician ready to give service in the Army or Navy of the United States when needed in the current emergency. I will apply to the Corps Area commander in my area when notified by your office of the desirability of such application.

Signed..........

1. Give your name in full, including your full middle name: ....

2. The date of your birth:..........
3. The place of your birth:..........
4. Are you married or single?..........
5. Have you any children? If so, how many?..........
6. Do you believe yourself to be physically fit and able to meet the physical standards for the Army and Navy Medical Corps? ....
7. Have you filled out previously the questionnaire sent to all physicians by the American Medical Association?
....
8. When and where were you graduated in medicine?..........
....
9. In what state are you licensed to practice?..........
10. Do you now hold any position which might be considered essential to the maintenance of the civilian medical needs of your community? If so, state these appointments: ....
11. Have you previously applied for entry into the Army or Navy Medical Service? If so, state when, where and with what result (if rejected, state why)..........

Signature..........
Date.......... Address..........

low a bombing attack. Naturally, it is hoped that no such necessity may arise, but it is far preferable to expend money and efforts in preparation for events that may not occur than to be afflicted with such happenings in an unprepared condition.

PROFESSIONAL COOPERATION

In these troubled times one is somewhat impressed with the view that if medical men could manage things the world might be better off. Much of the conflicts of the present day most likely can be laid to mismanagement by those who have been running the world for the past few decades. Nothing quite so sharply reveals the difference between the attitude of the medical man and most of those in power as an interesting story which comes from the campaign in Libya.

It seems that a certain British dressing station was captured for a time by the Germans. General Rommel himself, visiting this station, witnessed British surgeons attending the wounded and saw they were working on those needing attention, regardless of whether they were British or German. German physicians came in and helped with the work. Later the British retook the position and it was found that both German and British physicians continued working on both German and British wounded, the only consideration being the need of the wounded for surgical service, no distinction whatever being made as to the side from which the wounded came.

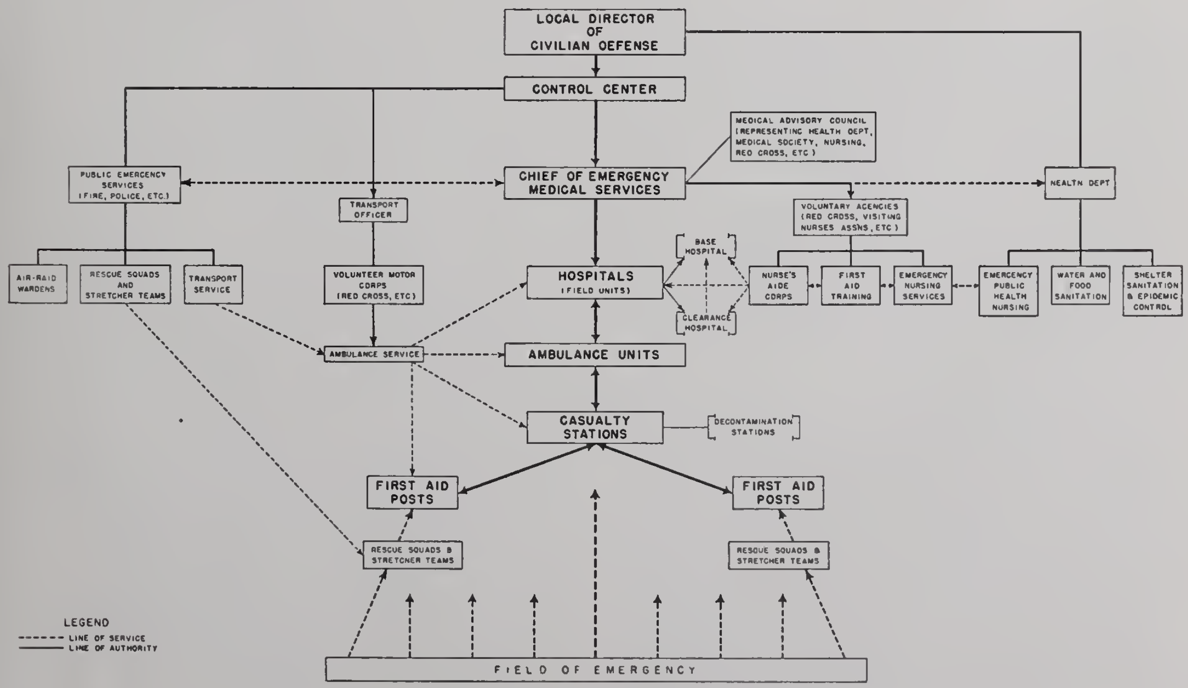
This attitude illustrates well indeed the spirit and principle of the medical profession. Might such spirit and devotion to the needs of others be applied to world affairs, we might some day have a better world in which to live.

INJUSTICE TO THE MEDICAL OFFICER

In recruiting an army from civil life the most important factor is the physician, on whose judgment the personnel is selected, and by whose attentions they are retained in service. Many of these medical men abandon established practice to serve their country for the minimum salary of the lieutenant grade. Since most of them are below middle age, they have not yet acquired a competence, and support of their families depends upon the army salaries.

Frequently dissatisfaction is expressed by these army surgeons because they have not received advancement which they had reason to anticipate, while officers of the line are more rapidly advanced to the grade of captain and major, with the accompanying increase of salary which is necessary to maintain their families. It is stated that an attorney, when entering legal army service in the Judge Advocate department, is at once given the grade of captain. Which is the more essential for army welfare, preservation of the soldier's health or

ORGANIZATION OF LOCAL EMERGENCY MEDICAL SERVICES


LOCAL DIRECTOR OF CIVILIAN DEFENSE
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FIRST AID POSTS
RESCUE SQUADS & STRETCHER TEAMS
RESCUE SQUADS & STRETCHER TEAMS
LEGEND
------ LINE OF SERVICE
—— LINE OF AUTHORITY
FIELD OF EMERGENCY

attention to his legal status? No officer from civil life enters upon army service so well equipped to function immediately in the duties of his office as the medical man, since his army professional requirements are substantially the same as those he has been exercising in civil life. Therefore, it would seem that above all officers he should be entitled to promotion with as much speed as is consistent with army regulations.

Yet discontent is generated among medical officers by reason of long retention in the grade of lieutenant, with insufficient income to maintain their families at home, often necessitating curtailments which it seems unjust to demand of them. It is reported that at times a doctor has sought retirement in order to return to private practice and relieve the hardship entailed on his family but the increased demand for army medical men has required his retention in service.

In view of the great increase in the army which is inevitable as the result of participation in active warfare, an incessant demand will be made for more doctors who will be expected to enlist to serve their country. They will respond in adequate numbers as they have always done when summoned by the call of duty. Since a successful, efficient army depends upon satisfaction of its personnel, it would appear that attention might wisely be directed to the adjustment of this salary injustice, of which medical officers are complaining.

POSTGRADUATE LECTURES

Last year a page of this journal was devoted to listing postgraduate lectures which were scheduled for our three states. This was discontinued in the fall when all the listed lectures had taken place, and none were received for the balance of the year. It has been the intention to resume this page to list postgraduate courses which were arranged for the profession for the coming year. Instead of beginning these announcements in the January issue, it will be deferred for at least a month to determine which of the planned courses of lectures will persist and which may be omitted.

The postgraduate course of lectures sponsored by University of Washington has been held every summer for the past twenty-five years with the exception of the summer of 1918 when urgency of World War I cancelled the course. It has been expected to present the lectures as usual during the coming July, but it has been deemed expedient to cancel them for this year, owing to the difficulty of securing attendance of anticipated lecturers. Since medical schools are planning to continue to function during the summer in order to graduate their students on a three and a half or three years course of study, it has been impossible to insure the attendance of members of the faculties for this postgraduate course of lectures. It is possible that some other planned courses of lectures may also have to be abandoned for this year. In next month's issue more definite information will be published concerning these lectures.

CAUSES OF GOITER

For many years controversy has centered on the causes of goiter, ranging from diet to microorganisms. Duerst[1] has reported to the Swiss Goiter Commission his investigations over a period of thirty-two years. Anatomists have long disputed as to whether the thyroid belongs to the respiratory or digestive system. Duerst has demonstrated that thyroid, lung and thymus are organs of the bronchial canal, and thus belong to the respiratory system. In the study of species of fish he has determined that the thyroid and thymus are connected with the gas exchange in water. Those living in upper well-oxygenated layers of water lose these organs at a certain stage of growth, while fish in deep water with less oxygen and higher carbon dioxide content retain the thyroid which may expand to large proportions.

Duerst states that fundamental errors have existed in the conception of gas metabolism. It has been supposed that oxygen deficiency in the atmosphere developed above 3,000 meters altitude. It has been determined that at 300 meters above sea level, at a temperature of 15° C., about 10 per cent of normal oxygen supply is missing. A tendency to goiter formation is evident in the presence of 10 per cent oxygen loss, which is a factor in prevalence of this condition among residents in certain mountainous regions.

It is a new discovery that carbon dioxide is derived chiefly from respiratory activity of the plant world. This does not occur in the presence of light, but exists in forests, for instance, where carbon dioxide exhalation may continue for eighteen hours. The carbon dioxide accumulates particularly in the presence of running streams of water, existing in larger amounts in the presence of air currents. This is said to explain endemic goiter in some river valleys. Goiters have thus been prevalent in forest regions of Russia, Canada and North America. The fact that some houses in these sections display fewer cases of goiter is said to be due to their being outside of air currents which accumulate the carbon dioxide in affected valleys.

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[1] Duerst, J. N.: Investigation of Causes of Goiter. J.A.M.A., 117:1997, Dec. 6. 1941.

While a decrease in oxygen is thus given as a major cause for thyroid development into goiter formation, Duerst states that nutritional metabolism plays a part in modification of acid base equilibrium in the direction of tissue acidosis. A diet with high acid content effects increase of parenchymatous glands, while in presence of alkalosis colloid thyroid is preserved and under certain conditions may develop colloid goiter. He states that potassium, even in the form of bicarbonate, may dissolve colloid in the goitrous colloid gland, whereas calcium salts produce stasis of the colloid. He regards endemic goiter regions as chiefly due to nature of soil and water and topographical location of a community. It is proved that a specific goiter infection cannot exist. These are interesting observations and help to clarify conceptions of the puzzling question of goiter etiology.

"THE FOUNDATION PRIZE" OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS

RULES GOVERNING THE AWARD

1. "The award which shall be known as 'The Foundation Prize' shall consist of $150."

2. "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal surgery."

3. "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."

4. "Manuscripts must be limited to 5000 words and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

5. "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors."

6. "The copies of all manuscripts and illustrations entered in a given year must be in the hands of the Secretary before June 1st."

7. "The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

8. "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

James R. Bloss, M.D., Secretary, 418 Eleventh Street, Huntington, W. Va.

ORIGINAL ARTICLES

THE NATURE OF ALLERGY: ITS PATHOLOGY AND MECHANISMS OF SYMPTOM PRODUCTION*

Milton B. Cohen, M.D.
CLEVELAND, OHIO

Much of the confusion about the fundamental nature of the allergic conditions seen in man arise from looking at them, as it were, through a microscope instead of a telescope. The dramatic nature of man's response to substances ordinarily harmless caused these conditions to be considered separately from other immunologic responses, and, in fact, led to their classification by Coca under the name atopy, meaning strange disease. This classification arose because early studies revealed many differences between allergic reactions and the body's response to infectious diseases and to inoculation with various sera. Continued study and experiment have demonstrated, however, that the differences are more apparent than real and, although there are still differences of opinion among immunologists and allergists as to classification, there is substantial agreement that the allergic responses which produce asthma, hay fever and the other clinical allergies are not immunology gone wrong, but immunology gone right. In other words, the allergic response is a defense reaction comparable philosophically with other defense reactions.

In order that this point of view may be understood, let us consider the mechanisms underlying a typical infectious disease such as typhoid fever. An individual drinks some water containing typhoid bacilli. These establish themselves in his intestinal tract and multiply at a tremendous rate. They invade the lymphoid area and use body tissues for their food. Soon they are to be found throughout the entire body and in the blood stream. During all this time, a period of from seven to ten days, the individual carrying them around is not ill. He becomes ill when, as a result of the invasion of his body, his own tissues produce antibodies which are capable of dissolving the typhoid bacilli. As soon as a sufficient number of these bacilli are lysed to free enough of the toxin which is present in the bodies of the bacilli to have a pharmacologic reaction on tissue cells, we have on our hands a patient with the clinical symptoms of typhoid fever. The clinical disease results from the toxin (endotoxin) freed from the bodies of the typhoid bacilli by action of the antibodies which will ultimately succeed in destroying all of the bacilli. When this occurs, the patient recovers and symptoms disappear. The disease then is a result of the defense mechanism.

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*Abstract of address delivered before the Sixty-seventh Annual Meeting of Oregon State Medical Society, Portland, Ore., Sept. 2-5, 1941.

If during convalescence from typhoid fever, some typhoid bacilli which have been walled off, break through the barrier and invade the body, the patient immediately becomes ill; but instead of going through the prodromal stage and first week of the disease, runs a course comparable to the fully developed disease in the second week. This is to be explained by the large amount of antibody present which immediately dissolves the bacilli and sets free large amounts of endotoxin. The incubation period has disappeared, our patient is allergic. Furthermore, if during convalescence, our hypothetical patient should drink a few typhoid bacilli, his antibodies would dissolve these organisms before they had a chance to multiply; the amount of toxin freed would be insufficient to cause symptoms, and typhoid would not develop. Our patient would not be immune. Whether, therefore, a person is immune to typhoid fever or gets the disease in its regular form or some changed form, depends on a quantitative relationship between typhoid bacilli and antibodies.

Let us consider next a patient who receives, for the first time, a prophylactic injection of antitoxin made of horse serum. No reaction occurs, but the body begins to make antibodies against horse serum. In a week to ten days these antibodies will be present in sufficient quantity to react with horse serum and to destroy it, with the formation of a toxic substance. If any of this original horse serum is still present in the body, a reaction occurs and our patient develops typical serum sickness. This illness runs a short course since the horse serum is soon destroyed and, being nonliving material, it does not propagate itself. Should there be no horse serum present in the body at the time antibodies against it are present, no reaction will occur. At this time, however, and for many months thereafter, a second injection of horse serum will be followed by the immediate development of symptoms. There will be no incubation period. From the foregoing discussion it can readily be seen that there is no essential difference between the genesis of symptoms in typhoid fever, a typical infectious disease, and serum sickness, a reaction to horse protein.

In the clinical allergies such as hay fever, the patient has developed antibodies against ragweed pollen. When this pollen is carried into the nose, the antibodies present there unite with it on the surface of the cells and destroy it with the production of a toxic material which arises from the tissue cells. It is this toxic material which gives rise to the inflammatory reaction which manifests itself as a hive. The reaction takes place in the nose, thus minimizing or preventing the absorption of pollen protein, which would be more damaging if the reaction occurred in more vital structures. This reaction, like that in serum disease and typhoid fever, is protective in nature and it is just coincidental that illness results.

The clinical allergies, then, represent examples of immunology gone right, not immunology gone wrong. There is nothing fundamentally strange about their mechanism.

The typical reaction in the clinical allergies is a hive resulting from the toxic material (H substance of Thomas Lewis) which is produced by cells from the interaction within them or on their surfaces of the allergen (antigen) and the reagin (antibody). The site of the hive will depend on the site of contact with the allergen which may reach the cell by direct contact or through the blood or lymph channels after absorption from a distant point. The symptoms will depend on the anatomy and physiology of the part affected. Thus a reaction in the nose produces the typical symptoms of hay fever; in the bronchial tubes those of asthma; and in the digestive tract those of acute, subacute or chronic gastrointestinal irritation. Since any organ of the body may be involved, allergic reactions mimic many other conditions and allergy like syphilis may be called the "great imitator."

The H substance reaction produced by allergy has a typical pathology, if examined at the proper time. Microscopic examination of a wheal, produced by ragweed pollen removed from the skin of a ragweed sensitive individual in from ten to sixty minutes after its formation, reveals a marked inflammatory reaction in the dermis. The reaction occurs around the blood vessels and the majority of the cells in the inflammatory exudate are eosinophiles. This characteristic picture can be seen only within the time limits mentioned. If a section is removed after sixty minutes, the inflammatory exudate will resemble in all respects that in ordinary inflammation and the pathologist will no longer be able to identify the reaction as a typical H substance reaction.

Furthermore, the histology of the wheal is the same, no matter what plant or animal protein is used to induce it in an individual specifically sensitive to the allergen. This indicates that the reaction is to a common toxin agent (H substance) which is released from the cells by the allergen (reagin) stimulation.

One of the curious things about the clinical allergies is that they occur in only a small percentage of persons who are exposed to allergens. There is a tendency for them to occur in certain families, and in fact there seems to be an inherited predisposition to develop them.

This inherited tendency may be considered to be comparable to the inheritance of musical capacity. Persons are not born with the ability to play an instrument, but the skill which will be developed by practice is certainly dependent on the relative amount of musical capacity which is inherited by the individual.

The clinical allergies are not inherited as such. Persons with the capacity to produce reagins acquire these antibodies after exposure to allergens. The clinical disease then occurs on reexposure to the allergen. You and I then see a patient whose protective mechanisms have made him ill.

CLINICAL PHYSIOLOGY OF SHOCK*

Kyran E. Hynes, M.D.
SEATTLE, WASH.

Corvisart, Napoleon's physician, is credited with having said that the physician, who does not combine a knowledge of the pathologic physiology and pathlogic anatomy of an organic disorder, will never become proficient in its treatment. In no case is this more true than that of circulatory collapse or shock. Since the work of Harvey established circulatory alterations on a sound basis, we have learned much of their etiologic and morphologic characteristics. It is only in the past few decades, however, that the profession as a whole has become acutely aware of circulatory disorders as only manifestations of altered circulatory dynamics. It is the purpose of this paper to review the normal dynamics of the circulatory system. I shall point out the possible physiologic alterations of this system and concern myself largely with a consideration of the pathologic physiology of shock. On this basis its logical treatment will be reviewed.

Normal circulatory mechanism is maintained by the heart acting as pump to force usual stroke and minute volume of blood into an elastic conducting tube, the aorta, against a usual peripheral resistance. Blood is then returned from the capillary bed to the right heart by a variety of forces, including the "near spent" energy of the last cardiac systole, massaging effect of skeletal muscular contraction, normal tonus of the vein wall, and negative intrathoracic pressure incident to respiration.

The prime determinant of the quantity of the cardiac output is the oxidative mechanism. If metabolism is accelerated by infection, fever or hyperthyroidism, the cardiac output is correspondingly increased. If metabolism is decreased as in myxedematous states, the cardiac output is correspondingly decreased. In health, however, with a normal oxidative mechanism, the venous return is of prime importance because obviously a normal heart can deliver only as much blood as it receives.

It was formerly considered that blood volume was a static factor that, except in hemorrhage or transfusions, changed only very slowly and then by formation or destruction of blood. This concept has changed with the knowledge that the circulating blood volume constitutes only a portion of the total volume. The remainder is stored as depot blood in such organs as the liver, spleen and skin. It has been shown that the fraction of actual circulating blood volume can change very rapidly as in excitement or upon exercising by withdrawing blood from these depots. A hot bath, for example, may increase the circulating blood volume up to 1300 cc. or an injection of adrenalin, by emptying the spleen, may add up to 1000 cc. to the circulating volume.

Normal blood pressure, that is so essential for sustenance of vital organs, is maintained in part by the cardiac output and an adequate circulating blood volume. Most important, however, is the constrictor tonus of the arterioles composing the peripheral resistance. The control of this constrictor mechanism is under both local and central nervous system control.

By utilizing this fundamental knowledge of normal circulatory dynamics and their control, we may logically consider the circulatory apparatus of a patient manifesting a circulatory disorder as being physiologically attributable to (1) *overactivity*, an overactive circulatory apparatus with an increased cardiac output and circulation time such as occurs in infections, fevers and hyperthyroid states; (2) *insufficiency*, a circulatory apparatus with insufficient circulating blood volume which is the basic premise of all types of shock; and (2) *inefficiency*, the inefficient heart performance which is fundamentally congestive heart failure. Obviously, a combination of these functional alterations would give a mixed picture.

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*Read before a meeting of Spokane County Medical Society, Spokane, Wash., Sept. 11, 1941.

We have no concern at this time with the functional alterations of overactivity or inefficiency. These will be similarly presented at a later date. Our concern at this time is a consideration of the pathologic physiology of the insufficiency syndrome, that is, circulatory collapse or shock.

Failure of the circulatory apparatus to maintain an adequate circulating blood volume is the solitary functional basis of a variety of conditions loosely termed shock, primary and secondary shock, postoperative shock, traumatic shock and circulatory collapse. This abundance of terminology has confused the fundamental and basic mechanism. Admission of a single basic alteration of the circulatory dynamics affords an opportunity for surgeon, obstetrician and internist alike to consider the disturbing factor and institute logical treatment.

On a purely mechanical basis, insufficient circulating blood volume, the "sine qua non" of collapse or shock of any type, may be due to an insufficiency of the pump, of the circulating blood, or of the peripheral resistance. To enforce strongly and clearly on our minds that first of all we must admit the basic premise of insufficient circulating blood volume, and, second, classify the site of the circulatory apparatus that is disordered, Harrison[1] has effectively termed these cardiogenic, hematogenic, vagogenic and neurogenic collapse.

Regardless of whether the causative mechanism is sudden heart failure, hemorrhage or loss of the constrictor tonus of peripheral resistance, the clinical picture of shock is produced by insufficient circulating blood volume and is, therefore, similar in all types. It is important, however, to realize that the clinical picture may vary widely in severity and not await the sophomore medical student's typical concept of the syndrome before recognizing it and instituting treatment.

Cardiogenic shock. If insufficient circulating blood volume is etiologically related to a sudden inability of the heart to force its contents ahead, blood accumulates in the venous system with a relative diminution in the arterial system. For this reason cardiogenic collapse is the only member of the shock group that characteristically may have an elevated venous pressure.

In its pure form cardiogenic collapse is only infrequently seen in occasional cases of coronary occlusion, sudden rhythm disturbances, and toxic myocarditis as in diphtheria. If the sudden inability of the heart to maintain an adequate circulating volume occurs in a previously normal circulatory apparatus, pure cardiogenic collapse occurs without any manifestations of congestive heart failure. If death or recovery does not soon occur, the relative diminution of blood in the arterial circuit is compensated by withdrawal of blood from the depots into active circulation, and this adds the clinical picture of congestive heart failure.

Case 1. Illustrative of this syndrome is a white female, 60 years of age, admitted to the medical service of King County Hospital, November 20, 1940, complaining of terrific precordial pain for the past four hours. Past history revealed an essential type of hypertension without any manifestations of heart failure. The clinical picture was that of circulatory collapse or shock that might just as well have been produced by a bleeding duodenal ulcer or a severe traumatic wound of an extremity.

The patient was lying perfectly flat and quiet in bed, complaining only of this terrific pain and marked weakness. Pulse was regular and 96, and temperature was subnormal. There was no dyspnea, orthopnea or any other signs of congestive heart failure. Electrocardiographic tracings verified the clinical diagnosis of coronary occlusion and treatment for shock was instituted with morphine in the usual manner.

By November 25, however, the patient was beginning to show signs of altering her circulatory dynamics with dyspnea, orthopnea and elevated venous pressure of 240 mm. Manifestations of the shock syndrome were still present so that treatment now had to be instituted both for congestive heart failure and circulatory collapse. Digitalization was begun cautiously with full realization of the dangers of the drug in this type of case.

Treatment of the cardiogenic type of collapse is obviously beset with difficulties but complete physical and mental rest is the sheet anchor. Digitalis is contraindicated in absence of congestive heart failure because it has been conclusively demonstrated that under these conditions it will further diminish the cardiac output and decrease the circulating volume. Attempts to increase the circulating volume by hypertonic infusions, transfusions or the use of vasoconstrictor drugs are obviously physiologically unsound.

Hematogenic shock. This type of collapse is characterized by insufficient circulating blood volume, directly attributable to shortage of blood. The physiologic alterations that occur may be most simply illustrated by acute important hemorrhage.

The initial effect of hemorrhage is a decrease in the venous return, with subsequent important diminution of the cardiac output. In spite of this diminished cardiac output, the mean blood pressure is maintained by active vasoconstriction of the arterioles composing the peripheral resistence. This compensatory constrictory mechanism is efficient until the cardiac output has fallen to sixty per cent or less of its normal quantity.

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[1] Harrison, T. R.: Failure of the Circulation, pp. 10-11. The Williams & Wilkins Co., Baltimore, 1935.

With further loss of blood from the circulation, the arterial pressure steadily declines until the critical level of Cannon is reached. At this level a precipitate fall of blood pressure occurs with further loss of even small quantities of blood. If bleeding is not controlled and the blood volume replaced before this critical level is reached, irremediable changes occur in the vital medullary centers. With failure of the vasoconstrictory centers the arterioles dilate and death quickly ensues.

The causative mechanism in hematogenic shock is inadequate or insufficient total blood volume, with all other important components of the circulatory apparatus intact. The shocked patient in pernicious vomiting or persistent diarrhea has a diminished blood volume, due to concentration of the blood incident to dehydration. Similarly some postoperative patients may suffer from shock by this method of dehydration and quickly respond to infusions of saline solution. The burn patient may be in shock, due to diminished blood volume incident to large quantities of serum lost in the involved region. Cachectic patients are likely shock candidates because of the already diminished blood volume incident to their protein deficiency.

Anesthetics, such as spinal block that effectively lessen peripheral resistance, may be ill-advised in the patient who has been hemorrhaging and already has a diminished blood volume. Reducing the effectiveness of this compensatory mechanism to maintain blood pressure may be fatal. Patients with extensive infections, as peritonitis or pneumonia, who show signs of trouble in their circulatory apparatus as manifested by quickening of the pulse, lowering of blood pressure, pallor, etc., are not suffering in most instances from toxic myocarditis as frequently considered. Most frequently these patients suffer from diminished circulating blood volume partly due to the hematogenic factor caused by the extensive exudate composed largely of blood.

Case 2. Illustrative of this syndrome is a 65-year-old white male who was admitted to King County hospital November 20, 1940, complaining of having been ill for three weeks with a cold, but worse the past week with chills, fever, cough and pain in his right chest.

Physcial examination disclosed a consolidated right lung that was verified by radiographs. Cocci in the sputa did not type. Blood pressure was 135/70 with pulse regular at 96. There were none of the objective or subjective manifestations of shock. Treatment was instituted with sodium sulfapyridine.

The following morning the patient was in typical shock with pronounced pallor of the skin of the entire body that in regions had an ashy-gray hue. Superficial veins were collapsed, extremities were cold and clammy, blood pressure had fallen to 76/40, with pulse 136. In brief, the clinical picture was that of shock that might just as well have been produced by trauma or external hemorrhage. The patient expired promptly.

Postmortem examination revealed the immediate cause of death was due to circulatory collapse. The right lung weighed 2300 Gm. Loss of 1500 to 2000 cc. of blood out of active circulation was obviously important in the immediate cause of the shock syndrome. We failed at the time of this patient's admission to realize that he was suffering from impending hematogenic shock just as certainly as if his radial artery was severed.

This concept of the pathologic physiology of hemotogenic shock has certain important implications. Of prime import is it to realize that the initial physiologic change is diminuition of the cardiac output, and only later does a fall in blood pressure occur. This realization has one diagnostic and another therapeutic implication.

Observation of blood pressure is not an adequate gauge of the possibility of impending hematogenic shock or collapse because, when it fails to an appreciable extent, irrevocable central nervous system changes may have already taken place. Laboratory observations are of little diagnostic aid until compensatory dilution of the circulating blood volume occurs. Awareness of the possible occurrence and careful clinical observation must suffice for early diagnosis.

The therapeutic implication is that vasoconstrictor drugs are of no value because nature has already exhausted this mechanism of maintaining the mean pressure. Control of the initiating cause and generous replacement of whole blood or plasma on the one hand, and isotonic saline solution on the other, as in blood concentration, is the specifiic remedy.

Vagogenic and neurogenic collapse. Relaxation of the constrictor tonus of periphereal resistance by a local or central nervous system mechanism similarly effects a reduction of the circulating blood volume and inaugurates the shock or collapse syndrome. The essential and initial alteration is vasodilatation. In this way a simultaneous decrease of cardiac output and of blood pressure occurs.

Central loss of the vasoconstrictor tonus may occur psychically as in ordinary syncope. Paralysis of these centers may acount for the occasional spinal anesthetic death, but many feel that the widespread splanchnic dilation effecting the insufficient circulating blood volume is a more likely explanation. Overwhelming reflex bombardment of the central nervous system with depression of the vasoconstrictor centers probably accounts for the shock initiated by rough operative handling of viscera, blows to the solar plexus, injuries to the testicle and sudden collapse of the perforated ulcer patient. Acute pancreatitis with its characteristic circulatory collapse is frequently explained on a toxic basis, but it is probable that the irritating inflammatory process initiates overwhelming reflex stimulation by involvment of the adjacent nervous plexus. Shock accompanying coronary occlusion with its terrific pain may in part be explained on this reflex basis.

Local vasodilatation, causing a pooling of blood that actually becomes depot blood rather than active circulating blood, may occur to an important extent in such conditions as pneumonia and peritonitis. Injection of certain drugs as histamine, that causes dilation of capillaries with resultant stagnation of blood, similarly inaugurates a shock syndrome, but efforts to explain traumatic shock on this basis now appear to have no tangible support.

Treatment of these two types of shock to be efficacious must first of all care for the underlying mechanism. If the shock is initiated by loss of central constrictor control due to overwhelming reflex stimulation, morphine obviously is of definite value. Vasoconstrictor drugs have their prime indication in these types of shock in an attempt to overcome the depression of peripheral resistance.

Mixed varieties of shock. From the foregoing discussion it is obvious that the initiating cause of the diminished circulating volume may be due to a combination of factors. In peritonitis, for example, the hematogenic factor may be present as evidenced by the enormous exudate which actually constitutes to a large extent a withdrawal from the circulating blood volume. Local vagogenic dilatation, causing splanchnic pooling of the blood, may exist from local effects of the toxin. Loss of the central vasoconstrictor control may be the result of overwhelming reflex stimulation of the central nervous system. A nice evaluation of the importance of these various factors must be made before logical treatment is instituted.

Before a clinical picture of circulatory collapse or shock is present in its advanced stage, earlier manifestations are too frequently considered some sort of disturbance of the circulatory system and thought of digitalis entertained. It should be emphasized that digitalis is not good for all ailments of the circulatory apparatus and is specifically indicated for practical purposes only in right and left congestive heart failure. Digitalis is definitely contraindicated in circulatory collapse or shock. It has been conclusively demonstrated that, in the absence of congestive heart failure, digitalis diminishes the cardiac output and decreases the circulating blood volume. Its use may prove the fatal factor in circulatory collapse of shock.

In summary, patients presenting clinical evidence of a disordered circulatory apparatus should be first investigated as to the type of abnormal circulatory dynamics that is occurring. If the difficulty is due to an inadequate circulating blood volume, the disorder may be of the heart, total volume of blood or peripheral resistance. Treatment must be of the altered physiology. Digitalis is never indicated and, in fact, is contraindicated unless there is definite evidence of congestive heart failure.

ORGANIC OCCLUSIVE PERIPHERAL VASCULAR DISEASES

DIAGNOSIS AND TREATMENT*

Roy J. Popkin, M.D.
Captain, Medical Corps Reserve, U. S. Army
MC CHORD FIELD, WASH.

The field of peripheral vascular diseases is of increasing importance today. This is due to two important factors. The first consists of improved methods of diagnosis and treatment; the second, the increased numbers of people living to the age group where occlusive vascular diseases are common. More people are demanding and expecting relief from uncomfortable or disabling symptoms as intermittant claudication, cold, painful extremities, nonhealing ulcers and even frank gangrene. We are in a better position today to offer them adequate therapy.

Chronic organic occlusive vascular diseases are the most important. They comprise 95 per cent of all vascular cases. Of these, arteriosclerosis obliterans and thromboangiitis obliterans, or Buerger's disease, affect the most individuals. The other disorders are comparatively rare. They consist of vasomotor disturbances as Raynaud's disease, embolic occlusion, scleroderma, thrombophlebitis, essential thrombophyllia and other rare vascular diseases.

Symptoms in chronic organic occlusive vascular diseases are due primarily to diminution in the amount of circulating blood to the extremity. Ischemia follows with resulting anoxia and reduced tissue nutrition. Reduction of blood flow is a direct result of occlusion of the vessel lumen. Vascular channels are occluded either by actual organic obstruction or by diminution of the lumen due to vasospasm. In thromboangiitis obliterans, furthermore, there may be direct involvement of the nerve in the inflammatory process, leading to neuritis. Ischemic neuritis is common in both thromboangiitis and arteriosclerosis obliterans.

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ETIOLOGY

The exact etiologic factors of these conditions have never been conclusively proven. For arteriosclerosis there are many contributing and etiologic factors. The important ones are heredity, age, diabetes mellitus, hypertension and endocrine disorders. Two things stand out in arteriosclerosis. They are the factor of stress and strain on the artery wall and the fact that no vessel is exempt. The stress and strain are purely mechanical factors and depend upon the circulating blood. Buerger's disease likewise has no known etiology. Most of the evidence points to its being on an inflammatory basis and probably due to bacteria. Disorders of metabolism and race are also to be considered. The inflammatory process, in contrast with arteriosclerosis, affects not only the arteries but the veins and nerves.

Both diseases are found chiefly in males. Whereas it is not uncommon to find arteriosclerosis in women, thromboangiitis obliterans is exceedingly rare. It is found mostly in the age group twenty to forty and arteriosclerosis above fifty years. No age or race of people is exempt. Thromboangiitis is more severe and the prognosis worse in members of the Jewish race.

SYMPTOMS

Disabling and uncomfortable symptoms arise primarily from the restriction of blood flow. Neuritis and pains due directly to vasoconstriction further incapacitate the patient.

The patient presents himself with one or more of the following complaints:

1. Intermittent claudication in the calves or thighs on walking short distances.

2. Uncomfortable coldness of the extremities which may even keep him awake at night.

3. Pain in the toes, feet or ankles on walking. Relief previously has been sought with arch supports. Dozens may have been purchased and found valueless in alleviating symptoms.

4. Weakness of the affected extremity with atrophy of the subcutaneous tissues and muscles. There may be early fatigability.

5. Trophic skin changes as dry, coarse, discolored skin.

6. Nail growth disturbances. The nails cease to grow, become thick, brittle and discolored.

7. Nocturnal cramps especially in the arteriosclerotics. These cramps may awaken the patient from deep sleep.

8. Various rest pains and paresthesias in the extremities. These may become very severe. Although they usually involve one or more toes, the entire extremity may be affected.

9. Color changes. The feet blanch on elevation, often becoming painful. On the dependent position they become cyanotic, reddened and uncomfortable.

10. Ulcers and even frank gangrene may be present.

Aside from the history given by the patient, the examining physician's hands and eyes are usually sufficient tools to make an accurate diagnosis.

DIAGNOSIS

The patient is best examined in a warm, draft-free room. The temperature should be about 82° F. Natural light is best. The shoes and stockings are removed and the extremities exposed. Evidences of atrophy, nail changes, trophic changes, discoloration and edema are looked for. The legs are then elevated and the onset of blanching and occurrence of pain are noted. The patient then sits up with the legs hanging down. Rubor will be noted, increasing in intensity and extending progressively up the foot, ankle and leg, depending upon the severity of the disease. The toes will frequently be found to be puffy. Evidences of superficial thrombophlebitis are usually very apparent in approximately 30 per cent of cases of thromboangiitis obliterans. Temperature changes are noted with the palm of the hand. The affected extremity or toes are cooler. They are not only cooler, but warm up much slower than the uninvolved areas.

Peripheral pulsations are felt for and recorded. These are the dorsalis pedis, posterior tibial, popliteal and femoral arteries in the lower extremities and radial and ulnar in the upper. In thromboangiitis it is not uncommon to find most of the pulsations affected to some degree. The femorals may be the only ones not involved in many cases. In arteriosclerosis the distribution is patchy. Furthermore, the upper extremities are seldom, if ever, involved. It is common to find only one or two arterial pulsations absent as the dorsalis pedis of one extremity and the posterior tibial of the other. Other pulsations are normal or only slightly affected.

The differential diagnosis between these two conditions is of academic interest chiefly. Diagnosis of arteriosclerosis obliterans can be made with certainty in a male past fifty with symptoms of recent onset and in the presence of diabetes mellitus or hypertension. Evidence of calcification by roentgenograms will be found in about 25 per cent of cases. Blood cholesterol is usually over 200 mg. The upper extremities are practically never involved. In thromboangiitis the blood cholesterol is usually less than 200 mg., symptoms are of long duration, the upper extremities are frequently involved and superficial migrating thrombophlebitis is present in many cases.

TREATMENT

In treatment and prognosis of these diseases the extent of vasomotor involvement is important. There are many special diagnostic measures to determine the degree of vasospasm. To determine this, the spasm is obliterated. This is accomplished in various ways. The vasomotor impulses may be interrupted by nerve block with novocaine, spinal anesthesia or use of vasodilators as alcohol and typhoid serum. Associated with these methods, surface temperatures are determined with a thermocouple and oscillometer determinations made.

When vasospasm is present, blood flow is restricted and surface temperature reduced. Following obliteration of spasm, there is an increase in blood flow. The surface temperature rises to normal. If the temperature is reduced due to organic obstruction, it will remain low in spite of vasodilators. Another test for spasm utilizes the principle of reflex heat. This is the basis of the Landis-Gibbon test. The upper or lower extremities are immersed in warm water. The blood is heated and causes a relaxation of spastic vessels of more remote areas. Other methods that have been employed use intravenous sodium nitrite or calcium and arteriography.

Treatment is directed at: (1) developing a collateral curculation faster than it is destroyed, (2) increasing the blood flow, (2) decreasing vessel spasm, (4) alleviating pain, (5) healing ulcers.

Some principles involved in treatment consist of the following:

1. Increasing the peripheral vascular bed is not the only important factor. It is important to see that the rate of blood flow is adequate. Blood volume must not only be increased to the extremity, it must circulate rapidly enough to supply tissue needs.

2. Sixty-five per cent of the blood of the extremity is in vessels of the deeper structures as the muscles.

3. Innervation of the vessels of the superficial tissues and that of the muscles is different and may be antagonistic. As example, adrenalin constricts the superficial vessels, blanching the skin. It increases the blood flow in the muscles.

4. Only 15 per cent of the entire blood volume of the body is in the arteries. The rest is in the veins, capillaries, heart chambers and blood depots.

5. Diseased arteries rapidly become rigid, occluded tubes. Vasodilator drugs have little or no effect on them. Only in early cases, where spasm is still a factor, will vasodilators be of value.

Treatment consists of general and special measures. Special are directed at specific problems as pain, ulceration or gangrene. General include prophylactic measures. These are directed primarily to alleviating and hindering further development of disabling or uncomfortable symptoms.

General measures in order of their importance are:

1. Rest. This is the most important single therapeutic agent. Absolute bed rest is of marked importance in the great majority of cases.

2. Measures relating to hygiene and care of the extremities. The diet must be adequate and well balanced. There must be a high liquid intake, approximately sixteen glasses daily. Cold showers and drafts must be avoided. Smoking is absolutely forbidden. The patient must be warmly clothed with long woolen underwear and wool lined high topped shoes. The nails should not be trimmed too closely. They should best be cared for by one familiar with the disease. The use of hot water bottles or other form of heat to the extremities is cautioned against. This applies to the use of powerful antiseptics, as iodine, lysol, phenol or caustic preparations as ringworm medicines containing salicylic or benzoic acids. The patient is taught to live within the bounds of his circulatory deficiency and to treat his extremities as if they were made of fragile porcelain.

3. Postural exercises. These are as important to the patient suffering from a circulatory deficiency as insulin is to the diabetic. They must be performed for many hours daily, the minimum being three hours before beneficial results may be expected. These exercises must be done in a warm, draft-free room. The legs are usually elevated for a minute, depressed for a minute and held in the recumbent position for two minutes. Variation in timing is individual. Due to the fact that many patients cannot perform these exercises as a result of arthritis, heart trouble, senility or even unwillingness, an oscillating bed has been devised. The patient can thus obtain the benefits of postural exercises for many hours daily, even during sleep.

4. External heat. It is applied in many ways.

Caution must be exercised to avoid burns: (a) a sitz bath nightly for ten minutes in plain, tepid water, (b) reflex heat using the infrared lamp applied to the upper part of the body, (c) a foot cradle in the bed with a single 25-watt bulb. This maintains the temperature about 90° F, (d) short wave diathermy applied cautiously to the thighs.

5. Intermittent venous occlusion, using the Collins-Wilensky method. If this is not available, satisfactory results may be obtained with an ordinary blood pressure apparatus. The patient fastens the cuff above the knee and inflates the pressure to just above diastolic, holding it for two minutes and then releasing. Full benefits are obtained this way although it is awkward and tiresome.

6. Drug therapy. Very few drugs help. Prostigmine does offer some relief in purely vasospastic disorders and early organic cases, where spasm is still a factor. Ethyl alcohol in doses of 5 to 30 cc. is beneficial. Mecholyl or histamine by ionization to the affected area helps. The method is complicated and time consuming. The mere fact that so many drugs have been offered suggests that most of them are of little value. Some that have received favorable mention by various observers are papaverine, tissue extracts, salt orally, calcium, thyroid, theobromine compounds, nitrites and sedatives.

7. Hypertonic intravenous saline has been successful in many cases of thromboangiitis obliterans. Its use is limited to individuals usually below forty years of age and who are free of cardiac and nephritic involvement.

8. Use of dilute U. S. P. hydrochloric acid orally is of great value in the nocturnal cramps of the arteriosclerotic.

The alternating suction-pressure apparatus has not been successful. Its use is limited to isolated cases and to those of acute embolic arterial occlusion.

Special measures:

1. Nerve block, as peripheral sensory nerve section or crushing, is of extreme importance in controlling pain. In cases of persistent pain which is not relieved after three or four weeks of intensive therapy and bed rest, nerve interruption offers the best solution, regardless of the age of the patient. The operation is simple and is not disabling. Once the patient is free of pain, ulcerations can be treated, gangrenous areas slough and much progress be obtained.

2. Lumbar or cervical sympathectomy. These are of value in early cases and only when spasm is the chief disabling factor.

3. Local treatment of ulceration requires much care. Healing ointments containing cod liver oil compounds are extremely beneficial. Antisepsis is best obtained with 5 per cent aqueous solution of gentian violet. Sloughing lesions are favorably influenced with warm ½ per cent chloramine solution.

4. Typhoid fever therapy is occasionally successful in healing of ulcerations.

Narcotics are avoided as much as possible. Their use should be extremely limited.

For best results in treatment of vascular disorders a combination of general and specific measures must be used.

In the exact choice of method, one must be influenced by the age of the patient, economic status and the presence of other disabling disease as cardiac disorders, arthritis, nephritis, diabetes or hypertension.

CONCLUSIONS

1. Rest is the greatest single factor in treatment of these diseases.

2. Arteriosclerosis and thromboangiitis obliterans are chronic, generalized, progressive vascular diseases of unknown etiology. As a result, perseverance in treatment is very important.

3. Treatment is successful when the following criteria have been fulfilled:

a. Uncomfortable symptoms as coldness, paresthesias or pains are relieved.

b. Walking distances are increased.

c. Ulcers are healed.

d. When the circulation is so increased that amputation, if necessary, can be done at a lower level.

COMPLETE IMMOBILIZATION NOT INDICATED FOR POLIOMYELITIS

According to evidence regarding the nerve supply of muscles paralyzed by poliomyelitis, massage and freedom of movement rather than immobilization are clearly indicated in the treatment of this condition, an editorial in *The Journal of the American Medical Association* for December 6 points out.

"Several years ago," *The Journal* says, "Sister Kenny (an Australian nurse) recommended that free movement should be allowed and that affected muscles should be accorded the benefit of massage and passive movement instead of immobilization. It should be pointed out in this connection that there is no experimental evidence to support the contention that single muscle units might, as a result of appropriate manipulation, be encouraged to send their nerve fibers to muscle fibers which have been rendered atrophic (wasted) by anterior horn cell (in the spinal cord) degeneration. Normal units, however, become atrophic under conditions of immobilization, since muscle fibers are dependent for normal stimulation on their local reflexes (e. g., stretch reflexes) and immobilization arrests the flow of these proprioceptive (sense of position) impulses as effectivel yas it abolishes the flow of lymph. Massage and freedom of movement, therefore, are clearly indicated if all available motor units in paretic (paralyzed) muscles are to remain at their maximum physiologic capacity."

LIBRARY OF THE

PULMONARY EMBOLI*

REPORT OF FATAL MEDICAL CASE

James M. Bowers, M.D.
SEATTLE, WASH.

Castleman[1] recorded that in 3,500 routine autopsies performed at the Massachusetts General Hospital, 9 per cent showed emboli or infarction of the lung, and in 3.5 per cent of all cases the embolus was the cause of death. In a correlation study by postmortem chest films and fixing and sectioning of the lungs in 400 autopsied cases, 14 per cent showed emboli or infarction. Prepared molds failed to reveal the traditional triangular shape of the infarcts, although frequently the costophrenic angle infarcts displayed a convexity toward the hilum. All infarcts were on the pleural surface of the lung and occurred wherever two surfaces met.

From roentgen study of the various stages of the process the author stated that acute infarcts are air-containing and poorly defined; a few days later they present a sharp line of demarcation, with red and white blood cells in the alveolar walls and spaces, and eventually the infarcted area becomes encapsulated and its alveolar walls undergo almost complete necrosis. Complete healing is evidenced by an organized fibrous scar which is seen as a linear shadow on the chest film. He felt that this progressive picture is found only in a lung previously damaged, as in chronic congestion, and it portrays a true or complete infarct, whereas an incomplete infarction is a transient condition which resolves without developing necrosis of the alveolar walls, renders a vague roentgen shadow, and causes little disability.

Hunter, Sneeden, Robertson and Snyder[2] found, in autopsies of 351 selected cases drawn from two public and two private hospitals, that the total number of patients with fatal pulmonary emboli was eleven, or 3.13 per cent. Of the 351, the medical cases were more than five times as numerous as the surgical. Of the eleven patients, six were medical and five surgical; nine were male and two female, and ages ranged from 34 to 89 years. In five instances, the pulmonary emboli had most probably originated in the veins of the calf as they were the image in age, length and diameter of those still remaining in the legs. Multiple emboli were more common than single massive clots. In four cases the lethal emboli could have come from thrombosed leg veins, but other thrombi either in the femoral or iliac veins or the venae cavae or in the right heart chamber seemed to be the more likely sources. In two cases there were no thrombi in the leg veins, the emboli having come from veins nearer the heart.

Nonfatal embolism was found in forty cases or 11.39 per cent; ten of these were with and thirty without infarction; and the emboli in the latter were considered either too small or of too recent origin to have caused necrosis. Small emboli proved almost twice as common in females as in males, which is the opposite of the ratio with fatal embolism. Diagnosis of acute phlebitis demanded the presence of polymorphonuclear leukocytes. It was found only seventeen times or 8.1 per cent among the 208 specimens, from which blocks of the leg muscles were studied histologically. Edema affecting the legs alone or as a generalized condition was encountered in a little less than one-third of the patients and, as those cases without venous thrombosis of the legs numbered a few less than those with a clot formation, in most instances the edema was ascribed to cardiac weakness. The attempt to classify clinical causes drew frequent overlapping, yet the one factor common to all the autopsied cases, with or without thrombosis, was continuous bed-rest for varying periods of time without the advantage of planned and systematic exercise.

In a statistical study of postoperative venous thrombosis and pulmonary embolism, Barker, Nygaard, Walters and Priestley[3] stated that out of the 1,665 cases reviewed, 405, of which 39.4 per cent were fatal, had embolism without clinical or necropsy evidence of venous thrombosis. In another series, cases of embolism with necropsy evidence but no clinical findings of venous thrombosis amounted to 265, of which 45.8 per cent were fatal. In a third series embolism with clinical evidence of venous thrombosis or thrombophlebitis was present in 227 cases, with a fatality of 14.9 per cent. The authors concluded that, if a postoperative venous thrombus remains attached, clinical signs and symptoms of thrombophlebitis develop in the involved vein. Detachment at the beginning will result in a small, nonfatal embolus. The same process may propagate into a larger more proximal vein and may be characterized by the release of a larger embolus which becomes fatal.

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*Read before the Semiannual Meeting of North Pacific Society of Internal Medicine, Victoria, B. C., Aug. 29-30, 1941.

[1] Castleman, B.: Pulmonary Emboli: Pathological Aspects, N. England J. Med., 220:264, Feb. 9, 1939.

[2] Hunter, W. C., Sneeden, O. D., Robertson, T. D. and Snyder, G. A. C.: Thrombosis of Deep Veins of Legs: Its Clinical Significance As Exemplified in Three Hundred and Fifty-One Autopsies, Arch. Int. Med., 68:1-17, July, 1941.

[3] Barker, N. W., Nygaard, K.K., Walters, W. and Priestley, J. T.: Statistical Study of Postoperative Venous Thrombosis and Pulmonary Embolism; Location of Thrombosis: Relation of Thrombosis and Embolism, Proc. Staff Meet., Mayo Clinic, 16:33-37, Jan. 15, 1941.

The same authors[4] deduced that clinically a postoperative patient, who has experienced a nonfatal pulmonary embolism, stands slightly less than one chance in two of developing some variety of eventual thrombotic or embolic episode; three chances in ten of future embolism, fatal or nonfatal; and one chance in five of developing subsequent fatal pulmonary embolism. The highest incidence of fatal postoperative embolism, amounting to 18.3 per cent, occurred in that series of patients with the previous clinical diagnosis of nonfatal pulmonary embolism. From their studies was developed the important fact that, along with other therapeutic steps, heparin may be used in moderate quantities to extend the coagulation time of the blood and thus in many instances prevent the formation of fatal emboli.

Ochsner and DeBakey[5] commented that, whereas phlebothrombosis and thrombophlebitis can occur as a result of localized and systemic infections, cardiopathies and trauma, in most instances they complicate operative procedures and manipulations. From their extensive elaboration of causes, it may briefly be mentioned that the greatest incidence of these two conditions is between the ages of 40 and 60 years, and in asthenic, adipose individuals. They are most prominent during winter months, when vasoconstriction of cold is a factor and when upper respiratory infections are most frequent, and occur more often following abdominal and pelvic operations and in those who suffer from wasting diseases such as cancer.

Precipitating factors are divided into changes in the vascular endothelium and its sympathetic nerve supply and changes in blood constituents such as increased viscosity, hypoproteinemia, hyperglobinemia, increased fibrinogen content, increased antitryptic power, increased peptidase, increased calcium content, decreased carbon dioxide combining power, increased platelet count and increased agglutination tendency. A further factor is circulatory retardation, which may be due to anatomy, posture, immobility, hypopnea or increased abdominal tension.

Diagnosis of thromboembolic phenomena is not difficult, if one will only keep the condition in mind. The presence of the predisposing and precipitating factors enumerated above, along with fever, pain and tenderness over the vein and edema will convey sufficient evidence. A chest catastrophe may be marked by shock, pleural pain and production of blood-tinged sputum. Absence of a chill, rapid onset of a pleural effusion and evidence of cardiac failure suggest the presence of a pulmonary infarct. Roentgenograms taken in more than one projection will often clarify the problem.

As prophylactic measures against venous thrombosis the same authors[6] outlined the following: avoidance of postoperative dehydration, early mobilization, use of respiratory stimulants, prevention of increased abdominal tension, application of heat over the lower part of the body, injection of sodium thiosulfate to reduce a high plasma clotting index and fibrinogen content, hirudinization (leeches) and heparinization. Conservative treatment consists of immobilization and elevation, use of heat, hirudinization, application of compression bandages and vasodilatation. The last measure may be accomplished by administration of parasympathetic stimulants or blocking the sympathetic nerves with procaine hydrochloride. Radical therapy entails ligation, excision, incision and drainage, and thrombectomy and embolectomy. If true pulmonary infarcts have been formed, resulting in tissue necrosis, the patient should be treated with vasodilators, respiratory stimulants and chemotherapy.

After this review of some of the more recent literature on the subject of pulmonary emboli, I wish to present a fatal medical case.

REPORT OF CASE

History of illness in the home. The patient, a white male, married, aged 53 years, was admitted the first time to the hospital Feb. 22, 1941. Six days prior to admission he developed fever, malaise and generalized aching in conjunction with a septic sore throat. On the following day there appeared a pruritic eruption, small, red, discrete, slightly raised, and of almost universal distribution, which later became partly confluent. One month before onset of his illness he had been on a visit in the middle west, feeling well, and it was improbable that he had since then had any food or water that was in any way contaminated.

Because of the persistence of his fever, which ranged from 100° to 103.6° F., he was given one gram of sulfathiazol four times a day, beginning on the third day of illness. This drug was discontinued in three days after a total of 12 grams had been given, since there was a possibility that it was aggravating the eruption. A member of the City Health Department gave the assurance that the patient did not have a contagious disease.

His symptoms and signs aside from the fever were rather insignificant. On the third day of illness he complained of jabbing pains through his head, which lasted for one day. His pulse rate was comparatively slow, ranging from 70 to 90 beats per minute, and a soft systolic murmur was present over the apex. No unusual pulmonary findings were elicited. Early in his illness the blood pressure was 135/90,

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[4] Barker, N. W., Nygaard, K. K., Walters, W. and Priestley, J. T.: Statistical Study of Postoperative Venous Thrombosis and Pulmonary Embolism; Time of Occurrence During Postoperative Period, Proc. Staff Meet., Mayo Clinic, 16:17-21, Jan. 8, 1941.

[5] Ochsner, A. M. and DeBakey, M.: Thrombophlebitis and Phlebothrombosis: C. Jeff Miller Lecture, South. Surgeon, 8:269-290, Aug., 1939.

[6] Ochsner, A. M. and DeBakey, M.: Therapy of Phlebothrombosis and Thrombophlebitis, Arch. Surg., 40:208-231, Feb., 1940.

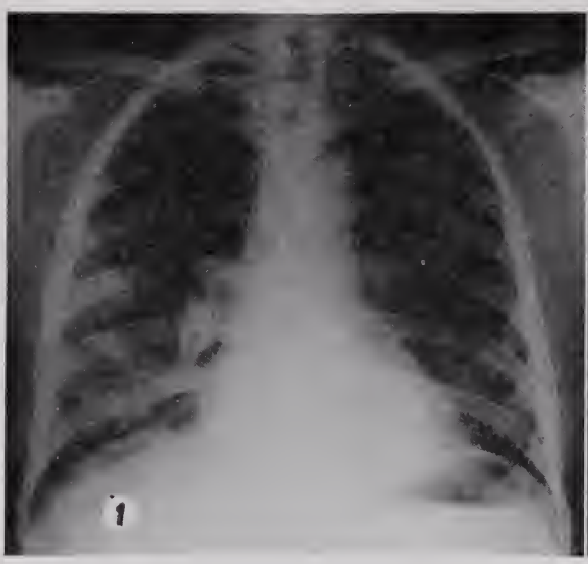

Fig. 1. Posteroanterior roentgenograms taken Feb. 22, 1941. Moderately disseminated parenchymal infiltration involving the middle and lower right lung fields is seen. Also, extending out from the left inferior hilar regions are considerably accentuated lung markings. A rather discrete localized opacity is visualized on the right side in the fourth interspace which is circular and measures 3 cm. in diameter. The cardiovascular shadow is within normal limits and the tracheal and mediastinal shadows show no essential deviation.

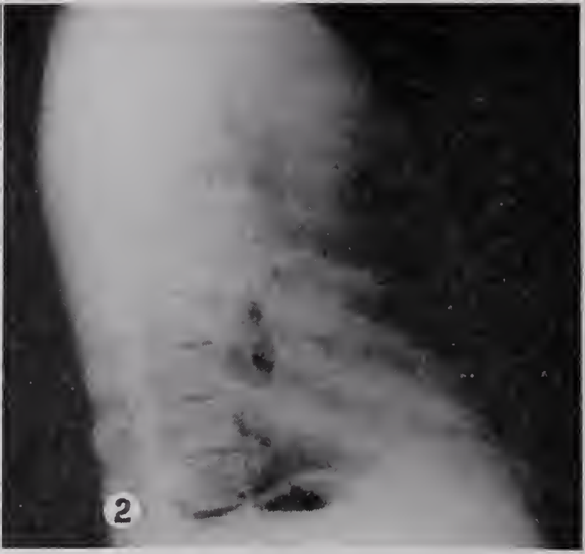

Fig. 2. Right lateral roentgenogram taken Feb. 22. The shadow which appears circular in the posteroanterior view is ovoid in this view and extends nearly parallel with the septum between upper and middle lobes. Generally these variations are characteristic of in infarct, depending on which angles the roentgen rays pass thorough the infarct. Presumably the roentgenologist made the diagnosis of a bronchial pneumonia involving the middle and lower lobes of the right lung, with an associated localized interlobar effusion between middle and upper lobes.

but just prior to admission it had declined to 100/60. A slight degree of edema was present over the lower legs. The patient was placed in the hospital in order that a further search could be conducted for the cause of his continued illness.

Original findings during first hospital confinement. The patient's temperature during his first week of confinement varied from normal to 103° F., with some sharpness in its rise and fall, pulse rate from 70 to 95 beats and respiratory rate from 16 to 20 excursions per minute. On the second day after admission, fine crepitant rales were heard scattered over the right base posteriorly. Urinalysis showed a moderate trace of albumin. Hemoglobin was 12.6 grams, red blood cells 4,300,000 and white blood cells 11,800 per cmm. with neutrophiles 86 and lymphocytes 14 per cent. Wassermann reaction on the blood was negative. Blood culture was negative in 24, 48 and 72 hours. Examination of a smear of sputum showed many gram-positive diplococci and a few pus cells. The benzidrine test on the stool was mildly positive for occult blood.

On admission a posteroanterior (fig. 1) and a right lateral chest film (fig. 2) showed evidence of a moderately disseminated parenchymal infiltration, involving the middle and lower right lung fields. Also extending out from the left inferior hilar regions were considerable accentuated lung markings. A rather discrete localized opacity was seen on the right side in the fourth interspace, which in the posteroanterior view appeared circular and measured 3 cm. in diameter, while in the lateral projection it was ovoid and extended nearly parallel with the septum between the upper and middle lobes. The cardiovascular shadow was within normal limits and the tracheal and mediastinal shadows showed no essential deviation.

The roentgenologist's differential diagnosis included a nonspecific inflammatory process. Presumably this was a bronchial pneumonia, involving primarily the middle and lower lobes of the right lung, with an associated localized interlobar effusion between the middle and upper lobes. His next assumption was that the opaque area suggested the presence of a metastatic neoplasm, which, however, was not supported by change of its appearance in the lateral projection. Finally, he stated that a specific infectious granuloma was a rather rare possibility and was mentioned only for exclusion.

Off and on during his first week in the hospital the patient complained about headache, sore throat and pains in his legs. He received a total of 41 grams of sulfathiazol. By the seventh day he felt very much improved and his chest findings were normal. The roentgenologist reported that in the posteroanterior view (fig. 3) there had been a

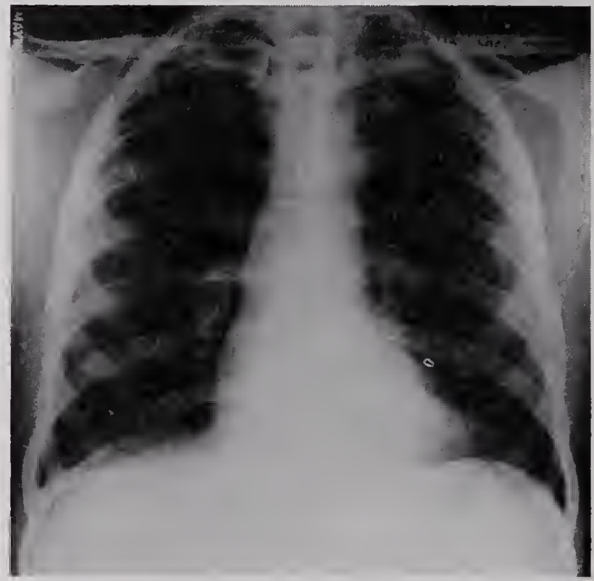

Fig. 3. Roentgenogram taken March 1. A remarkable clearing of the inflammatory process involving the right lower lung field has occurred in seven days. The circular opacity is very light, and evidently represents, according to the roentgenologist, some residual fibrosis at site of the localized interlobar effusion. Conclusion is that complete resolution has taken place.

remarkable clearing of the inflammatory process involving the right lower lung field, but the circular opacity, now very light, at the site of the interlobar septum, was still noted. This evidently represented some residual fibrosis at the site of the localized interlobar effusion. Slightly increased fibrotic markings were seen extending to the lower lobe. His conclusion was that there had been a practically complete resolution of the nonspecific inflammatory process previously visualized in the right lower lung field.

Second phase of first confinement. Despite the favorable recovery made by the patient as related in the foregoing paragraph, on the ninth hospital day he was nervous and apprehensive, had had an involuntary bowel movement the night before, and during the day complained of gastric distress. In the evening suddenly he went into a state of shock and collapse; he had a numb feeling in the back part of his head and neck; his skin was pale and showed a clammy perspiration; he was in a state of syncope, gasping for breath; and a moderate cyanosis was present. His pulse felt thready and its rhythm was somewhat irregular; eventually its quality improved. A loud systolic murmur was heard at the apex. The blood pressure was 90/70. Grossly his pulmonary findings were normal; he was not disturbed for a detailed examination. Two injections of morphine sulphate were necessary to allay his discomforts during the night.

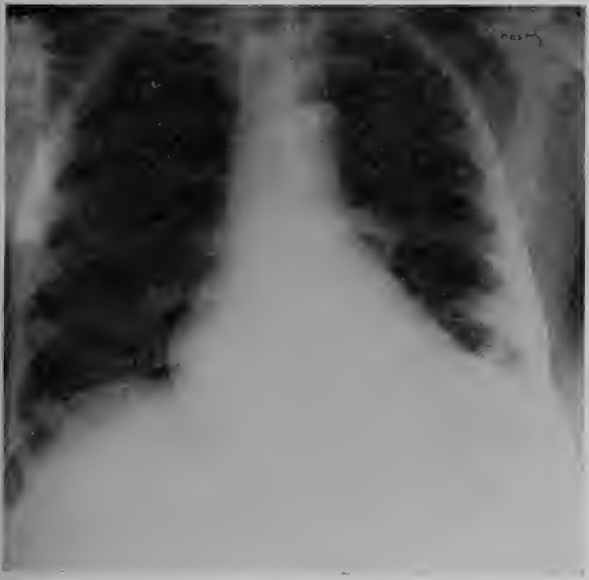

Fig. 4. Roentgenogram taken March 8. This date was seven days after onset of the second chest complication which occurred only a few hours after the preceding film was taken. The presence of pulmonary infarction was still unrecognized. The roentgenologist reported that this film displays a parenchymal infiltration of inferior portion of the left lung field, having the appearance of a resolving pneumonic process. Passive hyperemia is seen in the right inferior lung field.

Fever ranging from 98.6° to 103.4° F. was present the following seven days, reaching its peak on the fourth day. An occasional cough gave rise to expectoration of a thick reddish-brown sputum, which was produced off and on until his discharge fifteen days later. At times the patient complained of pain in the occipital region, right shoulder and left lower thorax. The odor of his breath was somewhat offensive. Dullness to percussion, bronchial breathing and fine crepitant rales were present over the left base posteriorly. Examination of his sputum showed a few staphylococci and pus cells, but no diplococci nor acid-fast bacilli were found. His hemoglobin varied from 11.6 to 14.4 grams, red blood cells from 3,800,000 to 4,700,000 and white blood cells from 10,400 to 17,400 per cmm., with neutrophiles 80 to 88 and lymphocytes 12 to 20 per cent. Early his sedimentation rate was 70 and a few days later 47 mm. in one hour. Urinalysis showed a moderate trace of albumin. The blood culture was negative in 24, 48 and 72 hours.

Electrocardiogram revealed a normal tracing except for a slight delay in the A-V conduction time, measuring 0.24 seconds. A chest film (fig. 4), taken seven days after the onset of his present predicament, displayed a parenchymal infiltration of the inferior portion of the left lung field which had the appearance of a resolving pneumonic process. The lung markings extending throughout the right inferior lung field were accentuated, probably because of the recent inflammatory process at this site. In the upright projection there was noted a suspicion of free air or gas beneath the diaphragm, which in the left lateral decubitus film proved to be unfounded.

Supportive measures were applied to counteract the shock and collapse, thoracic distress and fever. In one week he received 19 grams of sulfathiazol and 14 grams of sulfapyridine. The blood concentration of the former on the fourth day of administration was 2.75 mg. per cent. The usual amount of whole blood was given in one transfusion. Diathermy, sinipisms and steam inhalations proved efficacious. The patient's temperature remained normal during the last eight days of his confinement. On dismissal to his home a residual dullness was present still over the left lower lobe posteriorly. His strength was returning rapidly.

Second home experience. The patient's convalescence in the home was spent for the most part at complete rest. An electrocardiogram taken in the office after about two weeks showed the same normal findings as in the one taken five weeks previously. The residual pulmonary signs had almost disappeared. However, three and one-half weeks after leaving the hospital, and during a maintained inactivity, he experienced suddenly a rather sharp, penetrating pain in the left midaxillary line at the seventh interspace which was not accompanied by shock or apprehension. Temperature of 102.6° F. was reached quickly; volume of the pulse was good, blood pressure remained at a low normal level, and a sizeable area of dullness, with absence of breath sounds, loss of tactile and vocal fremitus and many fine crepitant rales, was elicited over the left lower lobe posteriorly.

On the following day the patient's general condition was rather critical, and naturally he was discouraged. He was coughing some, with expectoration of grayish mucus; a marked leukocytosis was present. Services of registered nurses were resumed; sulfathiazol again was administered with the patient receiving a total of 32 grams in four days before a change was made to sulfapyridine, one gram of which was given every four hours. Sinipisms, diathermy and steam inhalations were reapplied.

Second hospital confinement. The patient was readmitted to the hospital April 18, or two months after the onset of his initial illness and one week after experiencing the latest or third pulmonary complication. He was showing definite but slow improvement, with contraction of the involved pulmonic area to between the fifth and seventh interspaces near the spine, but he was brought in so that he could have more adequate examination and treatment than were available in the home.

A second rise in fever took place, reaching its peak of 103° F. in four days followed by a gradual decline during a like interval. The sulfapyridine was increased to 1⅓ grams every four hours. On the fourth day its blood concentration was 0.77 mg. per cent. However, it was stopped on the seventh day, after 50 grams had been given, since his fever was less, he was tiring of the drug, and a considerable amount of drugs of the sulfonamide group had been ingested, i.e., a total of 140 grams of sulfathiazol and 64 grams of sulfapyridine, or 168 grams in all, during the nine weeks.

Urinalyses showed less than one per cent albumin. Hemoglobin varied from 15.1 to 16 grams, red blood cells from 4,700,000 to 5,200,000 and white blood cells from 7,000 to 18,800 per cmm., with neutrophiles 84 to 86 and lymphocytes 14 to 16 per cent. When the higher leukocytosis appeared, a Schilling count showed 16 staff and 68 segmented granulocytes. On admission the sedimentation rate was 55 and four days later 24 mm. in one hour; similarly the blood urea nitrogen was 18 and 16.5 grams per cent and the icterus index was 5.

A radiograph of the chest (fig. 5) showed some clouding in the left base with elevation of the left diaphragmatic leaf. The appearance was that of a pneumonic process. In the right base there was less marked clouding, suggesting an incompletely resolved pneumonia. A film taken four days later showed no material change while one (fig. 6) taken a week later revealed clearing in both bases.

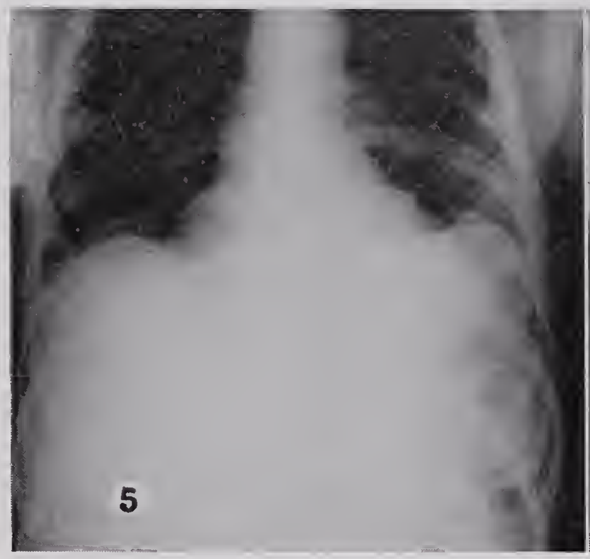

Fig. 5. Roentgenogram taken April 19. This date was eight days after onset of the third pulmonary complication. Diagnosis of infarction still had not been made. The roentgenologist reported there is some clouding in left base with elevation of the left diaphragmatic leaf, giving the appearance of a pneumonic process. A less marked clouding is seen in the right base.

The usual amount of whole blood was given in one transfusion. On April 22, or nine weeks after the onset of his illness, there was noticed first a painless, uniform, moderate swelling of the entire right lower extremity which showed some pitting on pressure around the ankle. Eventually some induration, which was not tender, developed in the region of the superior portion of the femoral vein as well as in the right groin. The peripheral arterial pulsations were normal. The limb was placed in a flexed position on a pillow, and a cradle with radiant heat covered its inferior portion.

Second phase during second confinement. On April 26 at 8:00 p.m., while he was being turned by the nurse, the patient suddenly became restless, complained of feeling hot, appeared excited, became pale and seemed to be gasping for air. He stated that he felt faint and apparently was in a panic. He was placed in an oxygen tent and his symptoms began to subside. When he was seen two hours later, his respirations were 36, with an increase in depth, and his pulse rate 144 per minute. His color was good and he was distinctly not gasping for air, although he was in an oxygen tent. He was not cyanotic, and the nurses stated that during this episode he was not cyanotic at any time. He was not complaining of any pain and was responding to questions.

As it was felt best not to disturb him, examination was confined to the anterior portion of the chest. There were no areas of decreased resonance, breath sounds were not impaired anywhere, and there were no rales, heart tones were good, and blood pressure was 115/80. On the next day his temperature rose to 103.6° F. while his pulse declined to 110 and respiratory rate to 32 per minute. He was disturbed by an unproductive cough, and yet he stated that he felt better, as he did indeed appear. While he was out of the oxygen tent his examination only revealed numerous rales in the left base along the axillary line. It was thought that his general condition would have to improve a great deal before considering the tying off of the right femoral or iliac veins or injecting the lumbar sympathetic nerves. The use of heparin intravenously was also postponed.

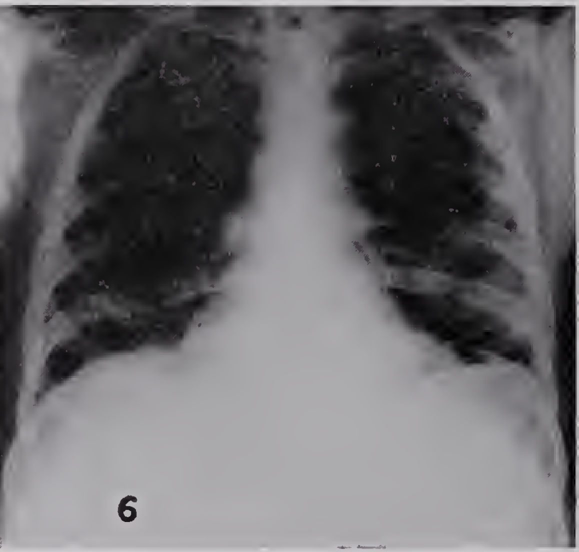

Fig. 6. Roentgenogram taken April 26. A clearing is seen in both bases. Onset of the fourth and final pulmonary infarction took place only a few hours after this film was taken. Proper recognition of the correct clinical diagnosis was then made.

On the following day the patient was listless; his color was ashen along with tinges of a slight cyanosis and occasionally his respirations were irregular. He then became noisy and for a week was delirious and entirely disoriented most of the time. His temperature, pulse and respiratory rates remained elevated to the end. For a while his blood pressure remained at a low level, and digitalis, neosynephrin, desoxycorticosterone acetate and whole blood were given by injection to support his circulation. Eventually he showed cardiorespiratory failure. During the final week his cough was very violent and he expectorated large amounts of prune-colored sputum.

After discontinuance of the sulfonamide group two and one-half weeks prior to his demise, there was an undulating decline in hemoglobin and red blood cell concentrations, despite replacements with transfusions of 500 cc. of whole blood on seven of the last ten days. During the first week a marked leukocytosis with a high neutrophilic count was present. However, this situation was reversed very quickly with the appearance, during the final ten days, of a progressive leukopenia and relative lymphocytosis, and the white blood cells numbered 800 per cmm. and neutrophiles 12 per cent the day before his death. Use of repeated transfusions and administration of large doses of pentnucleotide had no effect on this downward trend. His death took place two weeks after the occurrence of the last embolic phenomenon.

POSTMORTEM EXAMINATION

This was made by Dr. C. R. Jensen, whose report is as follows:

This is the body of a white male, 54 years of age, of an estimated weight of 185 pounds. The body has been recently embalmed. Nourishment and muscular development are fairly good. The right leg as far as the upper portion of the thigh is distinctly larger than the left.

The organs of the trunk are examined in the usual manner. There are no important abnormal changes in the abdominal viscera examined in situ; the peritoneal cavity is free of adhesions and there is no appreciable amount of free fluid. The pericardial sac contains a few cubic centimeters of clear fluid; the heart is estimated to weigh 375 grams. The pericardium is smooth; examined in situ the right heart chambers are rather markedly distended with clotted blood, but there is no abnormal thickness of the right ventricular wall. There are no important gross alterations in any of the valves of the heart. The main channels of the coronary arteries are clear. The lining and wall of the lower aorta contain yellow flecks, but it is not strikingly changed and there are no important gross alterations in the inferior vena cava or in the common iliac vein on either side.

There had been some embalming mutilation of the upper part of the femoral artery, and when the vessels below this level are explored, there is noted complete occlusion of the femoral vein by an adherent friable, gray-purple mass. Sections are taken from this region. The left femoral and vein are grossly normal. The pleural cavity does not contain any appreciable amount of fluid, but the lower lobe of the left lung is rather firmly adherent to the diaphragm, and is rather solid throughout most of its extent as palpated on the surface, and perhaps slightly knobby. This tissue on sectioning is indurated and its pattern near the pleura or periphery shows rather well demarcated regions roughly wedge-shaped, from 1 to 3 cm. in diameter, in which the tissue is quite caseous and pale yellow-gray, contrasting markedly with the darker red or purple of the surrounding lung tissue.

One such lesion is particularly prominent, while others are rather indistinct. Lung tissue throughout the upper lobe of the left lung is very soggy, partly from edema and partly from embalming fluid, but it is not granular, friable or airless and is generally a rather dark purple. The main divisions of the bronchi on this side contain a small amount of thick red tenacious material. There are no important changes in the main divisions of the pulmonary artery on this side. The right lung is of an estimated weight of perhaps 600 or 700 grams. In the main portion of the right pulmonary artery, there is an adherent friable pale yellow-gray mass which, in the main divisions at least, is rather well moulded to fit the lumen of the vessel. It is distinctly adherent to the lining; it seems almost completely to obstruct the arterial channel, and it follows out to the third or fourth arterial divisions in both the upper and lower lobes, but particularly in the former.

The tissue throughout the lower lobe is very edematous, almost airless and dark red, but in no place is it friable or unusually firm. In the middle lobe the tissue is similar to that in the lower, although slightly more firm and somewhat more wet, and of a rubbery consistency. In the upper lobe the tissue generally is quite friable and paler than in the middle and lower lobes. In the lower portion of the upper lobe, almost adjacent to the pleura and about midway between the ventral and dorsal surfaces, there is a cavity about 2 cm. in diameter filled with turbid purple fluid and possessing a friable purple wall without gross evidence of an organized lining. This wall is formed merely from the broken-down surrounding lung tissue. This is paler, gray-red to yellow-gray and rather friable. There is at least one rather large, roughly wedge-shaped, clearly demarcated region in this lobe, including the cavity mentioned.

The spleen is estimated to weigh about 250 grams and is uniformly firm and purple. No other important changes are noted in any other thoracic or abdominal viscera. Sections are taken from the heart, lungs, liver, spleen, kidneys, pancreas and right femoral vein and artery.

Anatomic diagnosis. Subacute thrombosis of right pulmonary artery; large infarcts in upper and middle lobes of right lung, with small abscess in the upper lobe; small infarcts in lower lobe of the lung; subacute thrombophlebitis of right femoral vein and marked edema of right leg.

Tentative comments. At autopsy it is not possible to determine accurately from an anatomic standpoint just what the sequence of events may have been, that is, whether the changes in the right leg antedated those in the pulmonary arteries, but it would seem from the clinical history that the pulmonary symptoms were present first. Changes in the pulmonary arteries are those of thrombosis rather than embolism, although it is quite possible that small emboli into the lung were what originally started the thrombosis of the pulmonary artery. It is thought possible that microscopic examination may throw additional light upon this indecision.

Microscopic examination. In sections of the myocardium, kidneys, pancreas and liver there are no remarkable changes.

In sections from the lower lobe of right lung and upper lobe of left lung there is slight thickening of the alveolar wall, with dilatation of capillaries and accumulation of phagocytic cells within the alveoli, heavily laden with brown pigment (hemosiderin); there is no histologic evidence of thrombosis in any of the vessels or of infarction.

Conclusion. Autopsy findings taken by themselves are not conclusive, but should be reviewed along with the clinical story. It seems most reasonable to assume that a low-grade thrombophlebitis existed in the leg vein without clinical symptoms, preceding onset of the pulmonary condition, and the latter was in all probability on the basis of small initial emboli from leg veins with subsequent formation of thrombi in larger divisions of the pulmonary artery. The only other possible assumption is that some peculiar disease in the nature of spontaneous thrombosis in the pulmonary artery existed and this was followed by thrombophlebitis in the vein of the leg. I know of no such clinical entity.

SUMMARY

The subject of pulmonary emboli along with cause and effect factors, namely, venous thrombosis, thrombophlebitis and pulmonary infarcts are reviewed briefly as to incidence, pathology, etiology, diagnosis and treatment.

A medical case with a fatal outcome is reported, wherein pulmonary emboli were released probably from venous thrombi of the right lower extremity. Correct clinical diagnosis was not established until after the onset of the fourth and final pulmonary infarction. A terminal leukopenia developed after prolonged use of the sulfonamide group. Thrombosis of the pulmonary arteries, as it was determined at autopsy, was complete on the right and partial on the left side.

MEDICAL ASPECTS OF INDUSTRIAL POISONS*

H. M. F. Behneman, M.D.
SAN FRANCISCO, CALIF.

The greatest asset of a symposium is pooling of the ideas of many of us. These ideas should be based on experience; therefore, I am not attempting a textbook type of presentation, but wish briefly to discuss such problems as have arisen in my contact with new and old poisons. If I become at all repetitious on a well borne theme, I beg you indulgence, but experience has shown it is no waste of time to drive home certain fundamentals.

METHYL BROMIDE

This chemical is widely used as an insecticide and in ripening rooms for fruit, particularly for pears. Here we have acute and chronic poisoning of a very serious nature, resulting in congestion and edema of the lungs, injury to the vascular system (particularly to the kidneys) and central nervous system. Acute cases which recover may have a latent period of hours or days before the presence of central nervous system injury evidences itself. Hemorrhage of the retina and brain are common, and if the injured recovers he may have central nervous system symptoms for years.

Dr. Leake and I saw two cases in 1938, where two men were on the same job of fumigating, but one had an inefficient respirator. They had driven from Chico to Berkeley before either one was conscious of illness. One man died in two days; the other one lived, but a year later had pulmonary and central nervous system symptoms. Our medical problem here is one of efficient respirators on the job, and immediate care upon the mildest symptom; .005 per cent in air is the upper limit of safety.

ZINC

Recent experimental work on zinc has caused us to look upon it differently. Zinc in itself is not toxic, any illness from it being due to its toxic impurities (lead, arsenic and cadmium). However, in conjunction with chromic acid, a powerful caustic, we are dealing with a potent compound. Moreover, there appears to be a marked allergy to zinc chromate, with caustic lesions of mucous membranes, eyes and skin. Dr. Gocher feels these and other metals are toxic on the autonomic nervous system. The chromates of different metals are used in dyeing, leather tanning, photography and electroplating.

LEAD ARSENATE

One of the common and effective insecticides is lead arsenate. It is very toxic, producing eye lesions in the form of corneal ulcers, as well as severe abdominal cramps.

ETHYL MERCURY PHOSPHATE

This chemical is a white powder and is the basic element of the commercial products "ceresan" and "mignesan." It produces eye injury such as conjunctivitis and edema; there are also intestinal cramps and a severe "burning sensation" in the digestive tract.

TETRACHLORETHYLENE

This drug is used widely in the cleaning industry. It is also known as perchlorethylene. It is very volatile, quite toxic and *not* soluble in water, thereby getting to the blood stream quickly. It mixes readily with oils, fats and vegetable matter. Its safe concentration is 1 to 500 parts per million of air. Its clinical picture is characterized by eye irritation, increased nasal mucus, nausea, dyspnea, fatigue and respiratory tract irritation. Although recovery after exposure is supposed to be rapid, I have seen the lung irritation last for months after the last exposure.

METAL FUME FEVER

The hazards of electric arc welding. Metal fume fever is not a true metal poisoning because the tissue reaction is not due to toxicity of the particles inhaled but to damage to the epithelial cells of the respiratory tract. Absorption of these altered proteins of the cells causes a reaction such as occurs in typhoid fever. These cases are becoming more numerous; they may be very acutely ill when seen two to twelve hours after exposure, but there are no chronic effects.

The severe attacks of metal fume fever known as "brass shakes" are quite similar to malaria. There may be local or general poisoning, but both enter through the respiratory tract. The hazard is in the zinc product mostly, because galvanized steel is 95 per cent or more zinc and only 1 per cent lead, and double that of iron. However, we also see this typical picture in manganese, copper, galvanized iron, brass and bronze welders. Lately there are more cases of cadmium fumes and fumes from fluxes containing fluorides. Fortunately there is great variance in susceptibility and often a relative immunity. The accepted limit of safety is 14 mg. of zinc per cubic meter for an eight hour exposure, and about 45 mg. for short exposures (Drinker).

Fortunately iron and aluminum oxides do not cause these acute, severe reactions, because iron oxide is in a finely divided state and is the chief compound of all steel and iron welding. Moreover, all metal oxides are promptly eliminated and do not accumulate. The new types of alloys being developed contain manganese, selenium, arsenic and cadmium and all are toxic. The wide use of stainless steel and aluminum, and the necessity of welding these metals, has caused inhalations of calcium fluoride which is really silicon tetrafluoride and extremely caustic, and the welders feel it much more than these other metals. The waste and sludge of old materials worked upon is a hazard.

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*Read before the Section on Industrial Medicine of San Francisco County Medical Society, San Francisco, Calif., Nov. 19, 1940.

As to the question of chronic poisoning, I doubt its real existence. I have seen roentgenograms in old workers that closely resemble the presilicotic or even first degree silicotic stage in the lungs. I feel in addition, however, as time goes on we will find chronic cases because of the new type of rods being used in welding. They are coated with asbestos and sodium silicate. I am inclined to feel that the damage and reaction in the body are due to mechanical inhalation of these particles injuring the epithelial cells such as in silicosis. Drinker has done a great deal of work on this and feels that the pulmonary edema is due to the gas and not the particles. He feels ozone is probably the irritant. If this is true, why should we get the presilicotic nodular appearances in roentgenograms? The only autopsy I know of was in an old worker who showed iron pigment in the lymphatics which could well account for the roentgen appearance.

The cinical problem of the hazards of electric arc welding would be very simple, if the rod manufacturers and employers would get together. Little work has been done in analysis of the gases in the different fumes. There is great need of more animal research work. Welding should not be done in closed spaces without excellent ventilation, which usually must consist of localized well-run exhaust pipes running right from the area of welding, and efficient respirators.

BENZENE (BENZOL)

One of our most common solvents for paint, rubber and fats continues to be benzene. Wide use in color printing, as a cleansing agent of clothes, in motor fuel and in chemical manufacturing, makes it a common industrial health hazard. Acute poisoning results in early death and chronic inhalation in slow poisoning. I am speaking now of benzene, spelled with an e (benzol), which is distilled and redistilled from coal tar; whereas benzine, spelled with an i, is distilled from petroleum, and belongs to the marsh gas series. Benzene, or benzol, is a chemical entity, while the other gasoline type of benzine has no definite composition.

Here, again, our damage, as in metal fume fever, is to the respiratory tract in over 90 per cent of the cases. That absorbed through the skin and digestive tract is practically negligible. Fortunately, our toleration is good for small amounts, poisoning depending on intake of the gas versus ventilation and elimination.

Late work on this chemical has resulted in a change in our old ideas regarding the mode of action upon the body. Our six important symptoms are vertigo, headache, gastritis, weakness, blood changes and extreme nervousness. The latter is undoubtedly due to the dissolving action of benzene on the fat content of nerve tissue.

May I stress the importance of blood examination as an aid to early diagnosis? Our old ideas of the blood picture were leukocytosis, then leukopenia with erythropenia, lowered hemoglobin, decrease in coagulation, aplastic anemia and cessation of growth of new cells. Further study has proven that the blood picture may vary a great deal. There may be hypoplasia to hyperplasia; the white cell picture may vary from leukopenia to leukemia, both myelogenous and lymphatic. Probably the lowered percentage of polys is one of the most valuable signs, but the important findings in order are (1) anemia, (2) increased size of the red cells, (3) reduced platelets.

Although an acute attack may seem to be well toward recovery, the important thing is to remember that the constant absorption of small amounts of this gas has very definite and lasting detrimental effects. About seventy-five parts of benzene per million of air are the limits of safe exposure. Until recently one hundred parts was considered the lowest limit of safety.

As to the treatment phase, there would be very few cases of industrial poisoning, if cooperation could be secured in every plant in which benzene is used. There is no longer any reason to expose any worker to toxic amounts, because such exposure can be controlled by examination of urine for inorganic sulfates. This should be done often; it is very reliable and helpful. Excessive absorption has taken place, if the inorganic urine sulfates are below 70 per cent; if they are below 50 per cent, great danger exists. Benzene fumes are much heavier than air, thereby forming pockets which only proper suction apparatus will ventilate satisfactorily. Alcoholics, strangely, seem to tolerate poisoning better than nonalcoholics; and women were always thought to tolerate it less on account of menstrual disturbances, but that has been disproven.

Employers should educate their workers and make frequent examination, particularly of the blood count, coagulation time and examination of the urine. Air analysis is the only other efficient test of the degree of hazard. I know of nothing new in the way of symptomatic treatment except oxygen, iron, liver, ventriculin, ascorbic acid, transfusions, roentgen rays to the long bones, calcium and intravenous saline. May I leave the thought that benzol poisoning may first manifest itself long after exposure has ceased, an acute infectious process starting off the picture.

CARBON MONOXIDE

May I touch for a moment on the subject of carbon monoxide. The discussion, quite acrimonious at times, still goes on as to the existence of such an entity known as chronic carbon monoxide poisoning. The index of the Surgeon General's Library contains well over a thousand articles coming under this heading. Many of them have been sharply answered by Yandell Henderson who still defends his theory that there is no such thing as chronic CO poisoning. Personally, I think it is much ado about nothing, because I feel they are both right.

This is why I feel that way: there is nothing mysterious about carbon monoxide. It is not a protoplasmic poison such as lead and other metals, and it is not accumulative. The toxic action of carbon monoxide is purely that of oxygen deprivation or anoxemia. There is no difference at all between 25 per cent saturation of the blood with carbon monoxide or living high on Mt. Shasta. The headache is there in both cases because of oxygen deprivation.

If one is exposed to acute toxic amounts of carbon monoxide, he either dies or recovers from that one exposure. If he is repeatedly exposed, however, to repeated though short periods of anoxia, he may well develop degenerative and vascular changes in the brain. If such exposure is frequent and severe enough, there may be permanent lesions in the cortical cells. After six years of a fairly wide clinical experience in carbon monoxide poisoning and animal experimentation previous to that on anoxemia, I deny that there is so-called chronic carbon monoxide poisoning from a single exposure. This comes up frequently before commissions and courts. Such plaintiffs should no more have the right to collect damages than an aeroplane passenger who frequently goes to such heights as will give him an equal oxygen deprivation. I can find no cases of a passenger suing an airline for anoxemia.

I feel, then, that there is no such thing as chronic carbon monoxide poisoning per se. If you are going to have poisoning, so-called, from repeated, acute exposures, then this condition should be known clinically as postasphyxial myelitis or encephalitis. Also, it is unfair even to use these terms unless there were repeated and accurate analyses of the air in which the "injured" was working, as well as of his blood at the time he was exposed to it. Lastly, the confusion is made worse by the innumerable reports of so-called chronic monoxide poisoning in districts where natural gas is used to a great extent. Carbon monoxide is not a constituent of natural gas, which is chiefly methane and no more poisonous than nitrogen.

LEAD

The recent scrapping of ships and ship-welding has increased the number of lead casualties. Diagnosis is not always easy, due to individual susceptibility and the varied symptoms of lead workers. The safe limit of lead dust is probably 1 to 2 mg. per cubic meter of air. I feel that, in the diagnosis of lead poisoning, the lead line on the gums and the stipple count are weak sisters and should be away in the background. Other metals produce the so-called lead line; furthermore, it only appears in filthy gums, and if you find it, it only means absorption and is absolutely no proof of intoxication.

Stipple cells are as fickle as Charlie McCarthy. I have seen acutely ill lead patients with very few stippled cells. Patients with gastrointestinal disturbances due to lead have a high stippled cell count, yet those with their symptoms in the nervous system might be quite ill and have a normal stippled cell count. Moreover, many deleading procedures, such as potassium iodide, cause the stippled cells to disappear. Our real help comes in the reticulocyte count, the analysis of a twenty-four hour sample of urine, and blood count.

As Gocher has pointed out, reticulocytes are in direct ratio to exposure; reticulocytes do not disappear until the patient is nontoxic. A count of over 5,000 means absorption, a count of 20,000 is on the brink of acute poisoning, and reticulocytes have been known to reach over 500,000.

All-important is the history of exposure. After all, we get the blue line on the gums, increased stipple cells and increased reticulocytes in a dozen diseases unrelated to this. Let us remember lead is excreted normally in the urine. The normal figure is .03 to .08 mg. lead per liter. The normal blood figure is anything up to .10 mg. per 100 cc. In addition to what we all know about prevention, each man should be required to have two suits of clothes and be required to take a shower after work. If he is not allowed to eat where he works, the percentage of cases is markedly less. Frequent determinations should be made of lead dust in the air.

In treatment of the average case I still think it is good medicine to mobilize that colloidal phosphate of lead into the tertiary phosphate in the bones; it certainly makes the patient feel a lot better when he is receiving intravenous calcium. I should mention, however, that while not of as much immediate relief to the patient, it is more basically sound to store lead at the beginning of treatment by giving a normal calcium diet and dibasic sodium phosphate.

We have no proof that calcium and lead form a molecule with each other in vivo; therefore, we cannot expect the administration of excess calcium to bring about precipitation of lead phosphate until sufficient phosphate has been supplied. It has been my experience that later mobolizing of the lead, however, by low calcium diet, phosphoric acid, ammonium chloride or KI, while good in principle, brings back too many unpleasant symptoms to the patient. Therefore, it is my practice now merely to place him on a low calcium diet which is a little slow.

CONCLUSION

Expert medical testimony is rightfully in bad repute with commissions and courts. Both sides, medically, can not be right. A big factor in production of this situation has been hasty diagnoses. We must not commit ourselves on evidence furnished by just a history or laboratory procedure. In our own defense and for the patient's protection we must demand from the insurance carrier the right to all the available criteria at our disposal. If this is denied, we should not commit ourselves.

There are always doctors testifying on both sides trying to educate a referee or a judge. The ones we need to educate are the worker, the employer and the insurance carrier. When the latter will install modern safety devices and modern analytic methods, the former will learn to be careful.

A good history, better physical, laboratory and roentgenologic studies are each important, but a calm, careful analysis of all these together will afford us less medical problems in industrial poisons.

COMPOUND FRACTURES*

Harry C. Blair, M.D.
PORTLAND, ORE.

The European war and our own defense efforts have increased the importance of and the interest in compound fractures. High explosive aerial bombs do a special kind of bodily damage, ripping, tearing, and maiming so severely that a special type of treatment is necessary for the resultant wounds.

Trueta, in his report on the Spanish campaign, drew attention to what he called "the closed method" of treating compound fractures of the extremities. Briefly, this consists of débridement, packing of the wound with gauze and application of a plaster cast. A large percentage of the injuries reviewed by Trueta were of the mutilated type, in which much of the skin and the underlying tissues had been torn away. The exigencies of the occasion demanded a simple treatment that would be suitable for routine use in every case of compound fracture. As Trueta's report showed, the combination of débridement, gauze packing and plaster cast immobilization proved to be an effective means of managing these injuries. It saved many lives and many limbs.

Sulfanilamide and sulfathiazol were then not generally available and far too expensive for the impoverished Spaniards to use. In spite of this, there were no serious infections. Gas gangrene was rare, even on a terrain where this complication is ordinarily prevalent. Trueta's report is particularly significant, when one recalls that many of the wounds were severely mutilated and hospital facilities were in all probability far from ideal. No real attempt, however, had been made to reduce the fractures in these cases. Consequently, the morbidity in this respect was extremely high.

In civilian practice compound fractures are usually the result of automobile and industrial accidents. In most of these the compounding wound is small; mutilation of the soft tissues is minimal; and, what is of prime importance, the wound edges can be brought together without undue tension. When properly managed, compounding wounds do not differ from any other clean surgical wound.

It is the purpose of this paper, first, to draw attention to the fact that successful treatment of compound fractures depends primarily on precise observation of proved surgical principles; and, second, to make the plea that young men be taught that obvious surgical principles are not to be discarded because of the availability of sulfanilamide and sulfathiazol. After all, these drugs are, and should not be considered more than, valuable aids to sound surgical measures.

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*Read before the Thirtieth Annual Meeting of North Pacific Surgical Association, Portland, Ore., Nov. 10-1ˀ 1941.

It is, of course, imperative that the patient with a compound fracture be seen by the surgeon as soon after the injury as possible. Within the first hour almost any procedure can be performed without danger of ensuing infection. Every passing hour, on the other hand, increases this danger. And after four hours the wound should ordinarily be regarded as infected. In selected cases, however, the use of sulfanilamide or sulfathiazol may extend this "deadline."

In my own practice the following regime is rigidly carried out: (1) débridement, (2) skin closure, (3) reduction and fixation of the fracture, (4) wound exposure.

DEBRIDEMENT

The wound is gently and painstakingly cleaned, the extent of the cleaning process being determined, more or less, by the condition of the wound. No antiseptic is placed in the wound itself, but the skin around it may be cleaned and painted with an iodine solution or one of the mercury preparations. The depth of the wound may be washed with a green soap solution. If green soap is used, the washing should be continued for at least fifteen minutes, depending somewhat on the size of the area involved.

The most important step in the cleaning process is removal of all the tissue which has been deprived of a major part of its blood supply. For this purpose a knife or a sharp pair of scissors is used. The edges of the skin are freshened by cutting off all irregular tags. If dirt is embedded in the ends of the bones, it is removed with a bone cutting instrument. But for no other reason should the bones be manipulated within the wound. Instruments should not be introduced into the depth of the wound for the purpose of reducing the fracture. This is avoided, not because of possible injury to the bone, but because of the trauma to the soft tissues which such a procedure entails.

No sutures are used in the wound unless they are absolutely necessary. Most of the bleeding points retract into the muscles, and the bleeding usually stops when the fracture is reduced and normal tension is placed on the tissues.

Except for sulfanilamide and sulfathiazol no medication is placed within the wound. The amount of these drugs which is implanted varies, of course, with the size of the wound.

SKIN CLOSURE

The wound is closed just as soon as the débridement has been completed. Any suture material may be used with the exception of catgut. I commonly use interrupted silkworm sutures. In the approximation, care is taken not to draw the skin edges together so tightly that ischemia will result. If the skin edges cannot be approximated without tension, parallel, lateral incisions are made, that is, an incision is made on either side of the wound. On the other hand, the wound should not be allowed to gap. No drainage is used. The wound is supposed to be clean. No infection is expected, and it rarely occurs. A drain under these circumstances is certain to increase the possibility of infection.

REDUCTION AND FIXATION OF THE FRACTURE

As soon as the skin has been sutured, the fracture is reduced. Compound fractures occur most frequently in the leg. In this region reduction by pin distraction is usually the method of choice. Such reduction has the advantage of bringing about "enforced, uninterrupted and prolonged rest"[1] which is of utmost importance. A plaster cast incorporating the pins insures complete fixation. This cast is applied from the toes to the groin. Gauze and sterile sheet wadding are placed over the sutured area before the cast is put on.

In selected fractures fixation has been done with vitallium plates. Vitallium causes no tissue reaction. Apparently, also, it does not increase the possibility of infection, and the skin may be sutured after a vitallium plate is in place. Such fixation, however, has the disadvantage that placing of the screws and the plate cannot be accomplished without considerable trauma to the soft tissues. I have not used this method of fixation in my own practice.

EXPOSURE OF THE WOUND

A window is cut in the cast over the line of suture. It is made large enough so that the wound can be completely exposed. The gauze and the sheet wadding are removed, no material being left to touch any part of the laceration. A fine mesh wire netting is placed over the window in the cast. The patient is put to bed with the injured extremity elevated. Edema, which increases the likelihood of infection, is thus prevented.

POSTOPERATIVE COURSE

If postoperative roentgenograms reveal that the fracture has not been satisfactorily reduced, and if at that time the four-hour "deadline" period has already elapsed, nothing further by way of reduction should be attempted. For approximately ten days or two weeks after an injury the body is particularly vulnerable to infection. Any undue movement of the injured limb or of the patient may cause the wound to break down. Hence, every effort should be made to keep the patient comfortable so that his muscles will be relaxed. Even though a fracture which has been properly reduced and properly fixed is usually not painful, codeine and even morphine should be given, since these drugs insure rest and are, therefore, helpful in preventing wound infection at this stage. Furthermore, the importance of rest should be impressed upon the nurses in charge of the patient, and they should be warned not to turn unduly the injured limb or the cast.

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[1] Thomas, Hugh Owen, cited by Keith, Arthur: Menders of the Maimed, London, Oxford University Press, p. 37, 1919.

What is the general course following the procedure outlined? Next day the temperature may perhaps go up to 103°. It may stay up for a few days, and then it will gradually recede. If swelling occurs, the tissues will tend to herniate through the cast window. Since the wound can be observed at all times, evidence of induration can be noticed at once. The sutures, if necessary, may be removed. Only the skin has been sutured; therefore, only the skin sutures need be removed. The glands in the groin are usually tender and painful when any serious infection takes place in the lower extremity. Also, obviously, the toes will swell if swelling occurs in the fracture region. It is rarely necessary, however, to split the cast because of swelling.

Serum in great quantities sometimes exudes from the suture line, running down over the sides of the extremity and coagulating. In a few days a dry, bloody coagulum gathers over the entire area exposed through the window in the cast. This is nature's method of wound repair. If gauze is placed on a wound, it keeps the wound moist, aiding thus in capillary flow of fluid through the skin into the deeper tissues. This capillary flow carries with it the bacteria which are always present in the skin. A wet wound often becomes infected. A dry wound never does.

The wound ordinarily heals kindly, and the stitches may be removed in about two weeks. But the stitches are never removed before two weeks, and frequently they are not disturbed for three or even for four weeks. The wound is not considered to be clean until all scabs have sloughed off.

COMMENT

During the fifteen years that I have been using the treatment just outlined, infection has been exceptional. Now that sulfanilamide and sulfathiazol are avialable, it should be possible to prevent even the exceptional infection. However, valuable as these drugs unquestionably are, they cannot replace meticulous surgery. It is necessary to bear in mind that a wound must be clean to heal properly. All devitalized tissue should be removed. Delay in instituting treatment is without justification, and the practice of having an assistant or an intern temporarily immobilize an injured limb until the next morning is inexcusable. Application of a gauze dressing keeps the wound wet and increases the possibility of contamination. Finally, since rest is an aid in preventing and in combating infection, the injured limb should be placed and kept at complete rest as soon as possible after injury.

To recapitulate, the four steps in the treatment outlined are: (1) débridement, (2) skin closure, (3) reduction and fixation of the fracture, and (4) exposure of the wound. These four steps should be rigidly followed. Not one should be omitted. Some surgeons carry out the first three but fail to include the fourth. Failure to expose the wound definitely increases the possibility of infection.

While this method is suitable only in those cases in which the skin can be brought together without undue tension, it should be borne in mind that the majority of compound fractures in civilian practice are of this type. When the wound has healed, the fracture is converted from a compound to a simple one. Then, if necessary, open operative repair for correction of any misalignment can be carried out with impunity. But the scope of corrective treatment is always limited, if infection has been allowed to take place either by delay in instituting treatment or by failure to carry out the definite principles here outlined. As a result, the patient may be left with an unsightly deformity or a permanent disability.

From the writings of Hippocrates[2] it is evident that treatment of compound fractures some four hundred years before Christ was a perplexing problem. Even this resourceful ancient physician was forced to advise that one should try to escape treatment of such injuries, provided he can do so honorably, for, as he explained, the hopes of recovery are small and the dangers many. Today compound fracture treatment is no longer a perplexing problem. The key to its solution lies in diligent application of ordinary, practical, well-proved surgical principles which are as effective in treatment of compound fractures as they are in the management of stomach ulcer or appendicitis.

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[2] Hippocrates: The Genuine Works of, translated from the Greek by Francis Adams, Baltimore, The Williams & Wilkins Co., pp. 171-209, 1939.

DIFFERENTIAL DIAGNOSIS BETWEEN HYPERTHYROIDISM AND NEUROSIS*

Frederick Lemere, M.D.
and
Brien T. King, M.D.
SEATTLE, WASH.

Hyperthyroidism is one of the bright spots in medicine, because the diagnosis is thought to be simple and the treatment clear-cut and direct. Diagnosis and treatment of neurosis, on the other hand, are vague and uncertain. Perhaps this is why so many physicians, faced with the problem of nervousness, diagnose hyperthyroidism when such a diagnosis is not justified. In ninety-nine cases out of a hundred, hyperthyroidism can be eliminated as the cause of nervousness by a brief history and examination. Elaborate study, including a B.M.R., is necessary only in the occasional case of nervousness.

Nervousness. The nervousness of hyperthyroidism is more a pressure of activity with restlessness, sudden purposeless movements, and a fine tremor of the hands that is felt better than seen. The neurotic patient is tense, upset by crowds or excitement, and has a coarse tremor that stops quickly on resting, as do the other external signs of nervousness. A patient, who bites or picks his nails, does not have hyperthyroidism.

Exophthalmos. Although roughly thirty per cent of hyperthyroid patients have exophthalmos, this is also seen in neurotic patients. Prominent eyes may be due to an anxious staring expression, or may be a family trait, a natural characteristic which can be determined by questioning.

Loss of weight. The hyperthyroid patient loses weight in spite of a voracious appetite, while the neurotic loses weight because his appetite is poor or quickly satisfied by a small amount of food.

Vascular system. The pulse of a hyperthyroid patient is rapid, full and steady. The neurotic patient's pulse is irregular, slows quickly on rest and is associated often with peculiar sensations of palpitation. The neurotic patient's hands are constitutionally cold, cyanotic, and have a prolonged blanching on pressure. The veins on the back of the hands are usually obscure and poorly developed.

Mental attitude. The hyperthyroid patient is usually optimistic, and the neurotic depressed. The hyperthyroid patient is irritable and extroverted, while the neurotic is more anxious and introverted. The hyperthyroid patient is usually frank about his personal life while the neurotic is evasive.

Course. The hyperthyroid patient usually has a gradual onset with a definite steady development of symptoms. The neurotic has a vague onset with fluctuation in and a great variety of symptoms.

Fatigue. The hyperthyroid is ambitious, enthusiastic and starts out strong, but tires quickly, especially later in the day. The neurotic has little enthusiasm or ambition but may be able to work hard, especially later in the day when he warms up. In the neurotic, fatigue is often increased by rest and forgotten when busy.

Family history. A history of nervousness is usually prominent in the neurotic patient's family background.

Symptoms	*Hyperthyroidism*	*Neurosis*
1. Nervousness	Pressure of activity. Restless, purposeless, movements. Fidgety.	Inner tension.
2. Tremor	Fine, felt more than seen.	Coarse, stops quickly on rest.
3. Exophthalmos	Often present. Develops with illness.	Usually absent unless family trait or constitutional.
4. Weight Loss	Appetite good.	Appetite poor.
5. Tachycardia	Rapid, full and steady.	Slows quickly on rest. Irregular.
6. Attitude	Optimistic, irritable, extroverted, frank.	Depressed, anxious, introverted, evasive.
7. Course	Steady.	Fluctuates.
8. Fatigue	Ambitious but tires quickly.	Always tired but forgets if busy.
9. Family History	Usually absent.	Nervousness in the family background.
10. Temperature	Warm, hands warm.	Warm and cold spells. Hands cold and wet.
11. Dyspnea	On exertion.	Sighs when at rest.
12. Goiter	Usually present.	Usually absent.
13. B.M.R.	High.	Normal.
14. Iodine	Helps.	No effect.

Table 1. Differential diagnosis.

Temperature. The hyperthyroid patient is always warm and has an intolerance to heat, while the neurotic has both warm and cold spells. The hyperthyroid's hands are always warm, while the neurotic's hands are cold and clammy.

Dyspnea. The hyperthyroid patient has dyspnea on exertion, while the neurotic is short of breath while resting and often sighs. The patient who complains of intermittent choking sensations in the throat, especially when under emotional stress, does not have hyperthyroidism.

Goiter. Goiter is present in ninety-nine per cent of hyperthyroid patients. A goiter is seldom present in neurotic patients (table 1).

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*Read before a meeting of King County Medical Society, Seattle, Wash., Nov. 17, 1941.

DISCUSSION

The signs and symptoms just discussed are usually sufficient to make a diagnosis, but occasionally this is difficult and further examination is necessary. The B.M.R. is perhaps the most important. Anything over plus 40 is strongly suggestive of hyperthyroidism, but the neurotic or psychotic often runs a high B.M.R. on the first tests. Repeated tests may still show a high B.M.R. in neurotic patients because the tension persists and diagnosis falls back on the clinical impression of the case. A low B.M.R. definitely rules out hyperthyroidism, but a high B.M.R. does not rule out neurosis. Crile has said that a B.M.R. is more often a hinderance than a help in the correct diagnosis of hyperthyroidism. The iodine test is very helpful in many cases. If a patient definitely and consistently improves under iodine, there is a likelihood of the nervousness being due to hyperthyroidism. If the patient has been taking iodine and one is still in doubt, withdrawal of the iodine should aggravate the symptoms if the condition is one of hyperthyroidism. If one is in doubt of the diagnosis, a few extra days observation permits a true hyperthyroidism to become more manifest.

SUMMARY AND CONCLUSIONS

1. Nervousness, tremor, fast pulse, dyspnea and fatigue are fairly constant and well defined in hyperthyroidism, while the symptoms of neurosis are fluctuating, often vague and disappear quickly on rest.
2. The hyperthyroid patient usually has exophthalmos and a goiter. The neurotic patient usually has a history of nervousness in the family background. The hyperthyroid patient loses weight in spite of a good appetite, while the neurotic loses weight because of a poor appetite.
3. The hyperthyroid patient is restless and irritable, while the neurotic is more inclined to be anxious and tense. A patient who has intermittent choking sensations, or who bites and picks his nails, does not have hypetrhyroidism.
4. The hyperthyroid patient feels warm and has warm hands, while the neurotic feels both hot and cold and has cold wet hands. A patient with cold cyanotic hands that blanch easily on pressure does not have hyperthyroidism.
5. A low B.M.R. rules out hyperthyroidism, but a high B.M.R. does not rule out neurosis.
6. If the patient is consistently better under iodine medication, he probably has hyperthyroidism, provided the element of psychic suggestion can be ruled out.

PSEUDOMUCINOUS CYSTADENOMA WITH MALIGNANT CHANGES

Richard S. Mitchell, M.D.
WENATCHEE, WASH.

In former years large abdominal tumors were quite common. Because of marked progress of medicine, as well as tendency on the part of the laity to seek early professional advice, these large neoplasms are becoming less frequent. Here is a case of such a tumor, adenocarcinoma in a young girl, which because of its rarity may be of interest.

The ovary is a fertile organ for neoplastic development. Particular periods in which disease may occur are puberty, pregnancy, menopause and to a lesser extent during the simple function of menstruation.

A pseudomucinous cystadenoma is a frequent tumor of the ovary, but probably less so than the simple kind. The larger tumors usually reveal multilocular cavities, the walls of which may be very thick and tough. The fluid contained in these compartments may be thin and watery, but often is thick, tenacious and mucoid in character. The color of the fluid may vary from a clear transparent to a turbid, murky substance tinged with blood or greenish from cholestrin crystals. It is not a true mucin.

This tumor is usually unilateral, may attain enormous dimensions, is glandular, the living epithelium of which secretes large amounts of fluid, causing cystic formations and dilatations.

CASE REPORT

On September 18, 1939, the mother brought her daughter, age twelve years, to the office, complaining of diarrhea, nausea and vomiting. This began five days previously and, while nausea and vomiting had ceased, the diarrhea persisted. She had had fever during the attack as high as 101°.

She had had a similar attack three weeks ago but recovered. She was going to school regularly except during the recent illness. This was the complaint offered and the reason for bringing the child to a physician. It is interesting in view of further developments. General health was good otherwise. Past illness consisted of pertussis, chickenpox and German measles.

The menstrual history began the preceding March, menses being regular, about every twenty-eight days, duration five days, moderate in amount and not accompanied with any particular distress. For the past two months it had occurred about every two weeks.

Physical examination revealed a well nourished and developed child, not severely ill. Temperature was 101° rectally, pulse 128, respiration 28. Eyes, ears, nose and throat were normal as were neck, lungs and heart, except for the increased rate.

The abdomen was enlarged from the symphysis to the xiphoid like a full term pregnancy. This enlargement was smooth, firm and not tender. It was first noticed about five months ago, but had grown more rapidly in the last two or three months. The girl was especially impressed because her clothes did not fit her and they had to be continually enlarged. A vaginal examination was not possible because of intact hymen and the rectal was negative.

She was sent to the hospital for treatment and preparation for operation, but because of slow response was permitted to return home for a few days. While at home she developed a thrombosis of left leg, requiring extra time before performing laparotomy.

On October 17, one month after first examination, she was returned to the hospital. She had normal temperature for eight days, there was no edema of the leg, but she could not straighten it out completely. During this time it seemed the tumor increased in size. On this day she became thirteen years of age.

Roentgenographic studies of the chest and abdomen were negative, as was urinalysis. Hemoglobin was 92 per cent; r.b.c 4,860,000; w.b.c. 9,650; color index 1; polyneuclear 69 per cent; lymphocytes 28 per cent; transitional 3 per cent. Wassermann test was negative.

On October 18, laparotomy was performed under ethylene anesthesia and a large multilocular cyst of the left ovary was found completely filling the abdominal cavity. There was a moderate amount of straw colored fluid free in the peritoneal cavity. The tumor and its contents weighed twelve pounds. There was some difficulty removing the tumor, requiring the emptying of some of the cysts by suction through a trochar. The left ovary was removed.

PATHOLOGIC REPORT

The wall proper is about 1.5 to 2 cm. in thickness. The lining through most of the specimen is finely granular, soft and purple, but along one margin the wall is irregularly thickened and contains several subsidiary compartments, one as large as 3 cm. in diameter which has apparently contained turbid yellow material, perhaps purulent, and several other small compartments about 1 cm. in average diameter which still contain some thick mucoid material (fig. 1).

Microscopic. In multiple sections the lining is typical pattern of pseudomucinous, papillary cystadenoma. The wall is thick and scattered through it are multiple nests of malignant hyperplastic cells, many producing a mucoid secretion.

Diagnosis. Large pseudomucinous cystadenoma of ovary with malignant change (adenocarcinoma). The postoperative convalescence was uneventful, she being discharged on the twelfth day.

FOLLOW-UP RECORD

Immediately after discharge from the hospital she was referred to a roentgenologist for therapy. Roentgen studies at this time showed no evidence of metastasis, but a rather extensive course of treatment was given with instructions to return for subsequent observation and management.

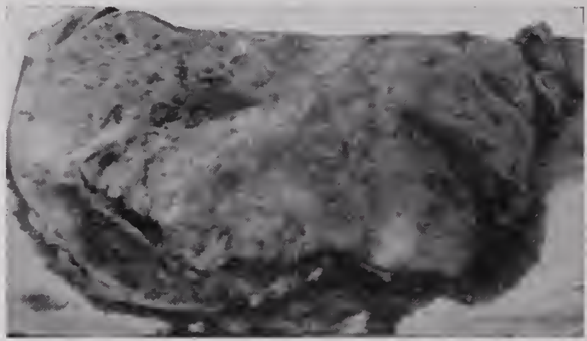

Fig. 1. Cystadenoma of left ovary of 12 year old girl. Dimensions 11½ by 7 inches. Weight 126 pounds after being collapsed.

Two months later pleura and lungs showed involvement, and the condition from that time progressed very rapidly to a fatal termination February 2.

The case is unusual because of size of tumor, apparent lack of concern in otherwise intelligent parents, development of thrombophlebitis and finally the malignant character in a thirteen year old child.

FIND A HIGH RATE OF PHYSICAL FITNESS AMONG BRITISH MEN CALLED TO SERVICE

Men in the age group between 37 and 40 years called up for the fighting services in Great Britain have been found on medical examination to have a surprisingly high rate of physical fitness, the regular London, England, correspondent of *The Journal of the American Medical Association* reports in the December 27 issue. He says:

"Medical examination has revealed a high rate of fitness among the men called up for fighting services; eight out of every ten have been found fit and many more will probably 'make the grade' after a few months of army life. A surprisingly high standard has been found in the age group 37 to 40; six out of ten have been found fit. During the past six months one-fifth of the men originally placed in grade 3, the lowest category accepted by the services, have been reexamined and found so improved physicially as to be posted to fighting units. Formerly they were serving as clerks, orderlies, batmen and storekeepers. Instructions have been given that all grade 3 men are to be examined after a few months of army life. In grade 2 comparatively few men have been regraded. This grade is composed of men not quite up to the standard needed for fighting and whose condition does not improve with army training. They are, however, capable of strenuous duties."

NORTH PACIFIC PEDIATRIC SOCIETY

North Pacific Pediatric Society will hold its semannual meeting in Seattle, Saturday, January 31. A program of clinical case reports will be presented at King County Hospital from 9 a. m. to 12 noon. The afternoon program, from 2 to 5 p. m. in the Medical and Dental Building auditoroum, will consist of a round table discussion on respiratory infections and papers on subjects of current interest. A complete program will be posted in the various hospitals. Members of medical societies, internes and service connected doctors are cordially invited to attend these meetings.

DOGS AND TULAREMIA

Evidence that dogs may be susceptible to infection with tularemia (rabbit fever) is presented in *The Journal of the American Medical Association* for December 13 by L. F. Ey and R. E. Daniels, Columbus, Ohio, who report an instance i nwhich they found the disease occurring in three dogs and their master. The dogs recovered, whereas the owner died. Heretofore it had been considered by many that dogs possssed a natural immunity to the disease.

The owner of the three dogs went hunting with them on November 6, 1940. The dogs ran down a rabbit which they killed and the master divided it into three pieces, giving one to each dog. The following day the youngest dog became ill and the other two dogs became ill a day or two later. On November 9 the owner of the dogs became quite ill with chills and fever and on November 11 he was hospitalized.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING, 1942

MEDICAL SCHOOL DEFENSE

When the first Japanese bomb hit Pearl Harbor, the administration of the University of Oregon medical school immediately launched its program of defense. It faced the war with full knowledge that the medical center provides one of the best enemy targets the city of Portland offers. Its many hospitals, class rooms, laboratories, libraries and clinics cluster brightly atop Marquam hill to provide a "natural" for even the poorest Nipponese bombardier.

Heads of the defense plan are Associate Dean D. W. E. Baird and Ralf Couch, administrator of hospitals. They are assisted by Charles N. Holman, E. S. West, W. E. Gaines and W. A. Zimmerman. Dr. Holman is in charge of professional phases of the plan, Dr. West, special activities, and Gaines and Zimmerman, physical plant.

"Professional" includes service expansion within hospitals, patient evacuation, surgical teams and nursing and volunteer pools. "Special" includes police and traffic, first aid, safety and air raid, emergency equipment, supplies procurement, communications systems and student registration. "Physical plant" includes the fire fighting utilities change in present buildings, maintenance of campus and roadways and utilities plan for new installations.

The defense council has ordered the following committee studies: service expansion within hospital, Charles N. Holman; fire fighting, Doeneka; first aid, Hance F. Haney; patient evacuation, Matthew Riddle; utilities, Wren E. Gaines; emergency hospitalization outside present hospitals, Ralf Couch; policing and traffic control, E. S. West; surgical teams, John Gius; reserve nursing pool and volunteer aids, Miss Grace Phelps; safety and air raid precautions, Robert S. Dow and W. Todd; information service, Mrs. K. Aumann.

The draft of the medical school's defense plan is being followed closely by the hospital service council of the medical disaster relief committee of Multnomah county.

State and county defense councils, state and county medical societies and the Red Cross appointed Adolf Weinzirl director of the medical disaster relief committee. Dr. Weinzirl, former Portland city health officer, is now head of the Department of Public Health and Preventive Medicine at the school.

Dr. Weinzirl appointed Mr. Couch as chairman of the hospital service council which is rapidly completing plans for care of Portland's injured, should the enemy ever arrive. Fifteen hospitals are participating in the program.

War put a crimp in the school's postgraduate sessions. The three-day course in chest diseases, December 11-13, was abandoned in light of the emergency, despite the fact it was nicely written in the past tense in last month's Northwest Medicine. A session in pediatrics slated for the last of December is to be held according to latest plans. The session in obstetrics and gynecology, January 19-23, will be held if conditions permit, according to Associate Dean D. W. E. Baird.

DANGEROUS NONNARCOTIC DRUGS

Numerous reports have been received by the Oregon State Pharmaceutical Association to the effect that many physicians apparently are not acquainted with the Pure Food and Drug Act as it pertains to nonnarcotic drugs. They are reported to be instructing patients to buy "across the counter" certain drugs that are classified as dangerous by the Pure Food and Drug Administration. Attention is called to those regulations pertaining to drugs that can be sold only on prescription of physician, dentist or veterinary.

The Administration gives the following examples of drugs considered dangerous when administered for use other than on prescription:

Aconite
Aminopyrine
Barbiturates
Benzedrine sulfate
  (for internal use)
Cantharides
  (for internal use)
Chrysarobin or goa powder
Chrysophanic acid
Cinchopen, Neocinchopen
  and other Cinchophen
  derivatives
Colchicine
Colchicum
Emetine
Phosphides
Phosphorus
Radium
Sulfanilamide
Sulfapyridine
Sulfathiazole
Tansy, Tansy Oil
Thiocyanates
Thyroid
The Anthelmintic drugs:
  Carbon tetrachloride
  Tetrachlorethylene
  Male fern (aspidium)
  Santonin
  Wormseed oil (chenopodium oil)
  Thymol

Acetanilid in dosage of more than 5 gr. a day or more than 2⅓ gr. in any three hour period.

Acetophenetidin in dosage of more than 15 gr. a day.

Antipyrine in dosage of more than 15 gr. a day.

Bromides in dosage of more than 30 gr. in a day or more than 15 gr. in any three hour period.

Bromide acentanilid combinations in dosages of more than 15 gr. of sodium bromide and 5 gr. of acetanilid a day or more than 7⅓ gr. of sodium and 2½ gr. of acetanilid in any three hour period (comparable amounts of other bromides are subject to the same restrictions.)

Epinephrine in solution of 1 per cent or stronger.

Ipecac in dosage of more than 10 gr. a day.

Strychnine in dosage of more than 1/20 gr. a day.

Therapeutically effective proportions of digitalis, squill, strophanthus or pharmacologically related drugs.

The Administration has repeatedly pointed out that it is impossible to list all drugs which may be dangerous, since not only the composition but also directions for use and conditions in which their use is recommended may have a very definite bearing on the question of safety or danger.

BOARD OF MEDICAL EXAMINERS

A special meeting of the Board of Medical Examiners was held December 9-10, at which time revocation proceedings were conducted.

Frank E. Fowler, President of the Board, announces that licenses to practice medicine and surgery within the State of Oregon, based on reciprocity with the several states, were issued to Harold Marcus, Elliott Boyd, formerly of Alberta, Canada, and New York, now associated with Ralph F. Davis in Portland; William Henry Pearson, formerly of Alberta, Canada, and Spokane, Washington, now located with F. B. Belt in Hermiston, and Lawrence Noall, formerly of Utah and now instructor at the University of Oregon Medical School. A license to practice osteopathy and surgery was also issued to William Paul Williams of Hanover, Kansas.

The Board is cooperating with Howard Naffziger of San Francisco, Chairman of the Medical Division of the National Defense Council, in laying plans for mobilization of civilian physicians. Irvin R. Fox of Eugene is in charge of this activity for the Board.

The semiannual examinations of the Board will be held January 21-23, at University of Oregon Medical School Library. The Board will also meet on January 23 to conduct its regular business.

STATE BOARD OF HEALTH

Northwest Regional Conference on Social Hygiene will be held in Portland, February 12.

Theme—"Social Protection in War Time With Particular Emphasis on the Venereal Diseases." Adolph Weinzirl, Director of the Division of Social Hygiene Education of the University of Oregon Medical School, has been asked to arrange an all day conference for Oregon, Washington, Idaho and British Columbia. Walter Clark, Executive Secretary of the Americal Social Hygiene Association, will be the main speaker.

The Division of Maternal Child Health of Oregon State Board of Health sponsored general practitioners from the state for activities at the pediatric postgraduate course conducted by the University of Oregon Medical School staff, December 29-31. In cooperation with the Division of Child Health of the State of Washington, general practitioners are being sponsored at the obstetric postgraduate session conducted by the Obstetrical and Gynecology staff of the University of Oregon Medical School, January 19-23.

SOCIETY MEETINGS

COOS COUNTY MEDICAL SOCIETY .

At a meeting of Coos County Medical Society members voted to immediately begin plans for starting a blood and plasma bank. Bernard Barkwill was elected president of the society for the coming year. Melvin Johnson was elected vice-president and Dr. McKeown was elected secretary and treasurer.

JACKSON COUNTY MEDICAL SOCIETY

Jackson County Medical Society met November 26 in Medford. A "Child Guidance Clinic" was discussed by members of the society and by Mr. E. H. Hedrick, superintendent of the Medford school system.

A meeting of the society was held December 13 in Medford. A. A. Baum of Salem addressed the society. E. R. Durno of Medford was elected president for the coming year; O. J. Halborth of Medford, vice-president; C. W. Lemery, Medford, secretary-treasurer.

JOSEPHINE COUNTY MEDICAL SOCIETY

Josephine County Medical Society met December 12 in Grants Pass. Guest speakers were Henry Garnjobst, Corvallis; Karl H. Martzloff, Portland, and L. S. Kent, Eugene.

LANE COUNTY MEDICAL SOCIETY

Lane County Medical Society met December 19 in Eugene. An address was delivered by W. W. Baum, President of Oregon State Medical Society, and election of officers was held.

MALHEUR COUNTY AND SNAKE RIVER VALLEY MEDICAL SOCIETIES

A joint meeting of the Malheur and Snake River Valley Medical Societies was held in conjunction with a staff meeting of the Holy Rosary Hospital. W. W. Baum, Salem, was guest speaker.

MARION-POLK MEDICAL SOCIETY

Marion-Polk Medical Society met December 9 at the Marion Hotel. The wives of the society members were invited. Guest speaker was Carl Sumner Knapf, President of Willamette University.

MULTNOMAH COUNTY MEDICAL SOCIETY

Multnomah County Medical Society held the first meeting of the month December 3. Olaf Larsell presented a historical sketch on "Some Early Oregon Doctors." An appeal for support of the "Portland Milk Fund" was presented by S. G. Heinricke and Captain Fred Roberts of the Portland Fire Department. "Hysterosalpingogram" was discussed by Martin Sichel. A symposium on "Immediate and Delayed Repair of Pelvic Relaxation" was presented by T. W. Adams, R. C. Blatchford and R. L. McArthur of Portland, and G. S. Beardsley of Eugene.

The annual dinner meeting was held December 17 at Hotel Benson. George E. Henton was inducted as president for the year 1942. Officers elected were as follows: Earl M. Anderson, president-elect; Charles P. Wilson, vice-president; John Raaf, secretary, and B. O. Woods, treasurer.

Guest speaker was Dr. George Bernard Noble, Reed College, who spoke on, "The United States at War."

UMATILLA COUNTY MEDICAL SOCIETY

Umatilla County Medical Society held the regular monthly meeting at Pendleton Tuesday, December 9, at which time there was the annual election of officers for 1942. The following men were selected: President, C. O. Wainscott; vice president, L. J. Feves, and secretary-treasurer, T. M. Barber.

The main program for the evening was the presentation of two sixteen millimeter films, one on the subject of Hernioplasty as prepared by Dr. Mims Gage of Tulane and the other was Transverse Cervical Caesarean Section by Dr. Louis Phaneuf of Boston.

YAMHILL COUNTY MEDICAL SOCIETY

Yamhill County Medical Society met in McMinnville December 2 for election of officers. H. Stolte, McMinnville, was named president. Wm. T. Edmundson, Newberg, was elected secretary, and C. H. Law, Amity, was elected counselor.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SPOKANE, AUG. 17-19, 1942

MEDICAL PREPAREDNESS COMMITTEE

Doctors in the armed forces, doctors on the "alert" in civilian defense, doctors in industry and announcement of revised plans of the Selective Service System were a few of the problems reviewed and studied by the Committee on Medical Preparedness of Washington State Medical Association at its December meeting. Organized several months ago, this committee is made up of representative physicians from several sections of the state. It works, as in other states, with the national Committee on Medical Preparedness of the American Medical Association. At the request of the state committee each county medical society has been asked to appoint a Medical Preparedness Committee.

CIVILIAN DEFENSE

The State Committee was informed recently by Donald G. Evans, state medical officer for the Civilian Defense program, that a majority of the cities, towns and communities in the state, especially those in Western Washington where the emergency is more apparent, are fairly well organized for civilian defense. Tacoma began organization last August. A rapid preliminary survey by Dr. Evans and his staff, made December 12-13, showed that plans in many communities were lacking in certain essentials. In evaluating the plans and organizations in each community, the following nine main points were emphasized:

1. Organization and staff for first aid posts, casualty stations and hospitals.
2. City organization.
3. Transportation and ambulance service.
4. Communication system.
5. Public health resources and organization.
6. Advisory committee.
7. Food supplies.
8. Training program.
9. Local coordination.

CONSIDERATIONS IN DEVELOPMENT OF ORGANIZATION OF EMERGENCY MEDICAL SERVICES FOR CIVILIAN DEFENSE:

1. Organization and staff for hospitals, casualty station, first aid posts.

a. Zones or districts for cities. It is felt that almost all communities over 4500 population will need to have more than one zone to serve as points of mobilization, etc., number of zones to be determined by appraisal of areas of vulnerability and accessability.

b. Definite designation of sites of hospitals, casualty stations or other points of assembly. It is important that the extent and type of work to be performed at each place be determined.

c. Definite assignment of doctors, nurses, nurses' aides, and other nurses' helpers to posts. Their duties should be definitely outlined.

d. The use of shifts or the organization of emergency and reserve squads of personnel is recommended. In this connection experience has shown that a twelve-hour shift constitutes about the longest work period which is desirable for any one individual.

e. It is recommended that a doctor and one or two nurses be stationed at the site of emergency or at some casualty station or other clearing station so that segregation of patients may be effected before they are sent to hospitals. This is important in order to prevent undue congestion in the hospital receiving rooms at the time of the medical emergency. It is also recommended that some form of tag system be used.

f. Experience has shown that it is advisable to provide facilities for segregation of the injured from those who are suffering from severe nervous shock or nervous reaction to the emergency. Provisions for the care of such shocked individuals should be made in a place removed from the hospital.

g. Development of a clear, simple plan for mobilization of personnel to assembly posts, and for movement of personnel from that post to scene of disaster.

h. Organization of auxiliary and reserve hospital facilities.

i. Inventory of equipment such as first aid equipment, beds (both hospital and auxiliary hospital beds and cots), blankets, surgical instruments, etc. A careful estimate of the needs for all types of equipment of this kind should be made. It is desirable that this inventory be made the special duty of one individual.

j. Inventory of supplies such as medical and surgical supplies, drugs, dressings, fluids, biologicals, etc. (This would include opiates, tetanus and gas gangrene antitoxin). This inventory should be kept reasonably current. This problem should also be assigned to one individual as a special project.

k. A careful check should be made to determine whether personnel who have been assigned to definite tasks are liable for call to military or other service in time of emergency.

2. City Organizations.

a. Careful investigation should be made to determine the presence of and to provide for adequate supplies of water, electricity, and heat for hospitals, casualty stations, etc.

c. *Transportation.*

a. There should be adequate, regular and reserve ambulances with sufficient personnel with good training and with sufficient equipment to handle the emergency and usual calls.

b. It is recommended that some ambulances be assigned to zones or other points of mobilization and that reserve ambulances be assigned to a central depot or headquarters for requisitioning when needed.

4. Communications.

a. Establishment of a simple and effective means of notification to personnel to report to duty.

b. Establishment of adequate communication system to permit operation of plan in event of loss of telephone service. *The Army states that the use of short wave radio is to be discouraged.* Therefore, provision should be made for an adequate messenger service, by regularly scheduled messenger trips and by special messengers.

5. Public health organizations.

a. Provision for communicable disease and epidemic control, etc.

1. Such as typhoid, diphtheria, smallpox and the like.
2. Inventory of available supplies for such control.
3. Utilization of the public health nurses in carrying out such a program.

b. Water supply and sanitation. A plan should be worked out to insure maintenance of these services in an emergency. Such plan should be checked with the State Department of Health.

6. Food.

a. Arrangements should be made to provide a sufficient supply of food and to provide for its preparation. The local chapter of the American Red Cross will be of considerable assistance in this matter.

7. Training Program.

a. *It is imperative that drills and rehearsals for doctors and nurses, nurses' aides and nurses' helpers and other personnel be held at once, even if the drills are held without equipment.* It is only in this way that organizational difficulties can come to light and can be ironed out prior to the onset of a real emergency.

b. Courses of instruction for nurses' aides and nurses' helpers should be set up.

c. Courses of instruction in first aid for the public should be set up—the American Red Cross can be of assistance in this respect.

8. Local coordination.

a. With the local coordinator careful consultation on drawing up plans for emergency medical service should be had to effect coordination with:

1. Police Department—Traffic control.
2. Fire Department—Fire control.

b. Cooperative planning should be carried on with:

1. American Red Cross.
2. Medical and Nursing Societies.
3. Local industries—First aid, etc.
4. Public Health agencies.

MEDICAL EXAMINATION OF DRAFTEES

The Committee on Medical Preparedness has issued a communication which calls for a revision in the medical examination of draftees who for several months have been examined by volunteer physicians on local boards. The new plan, effective January 1, calls for establishment of Army examining boards which will travel to certain designated stations and conduct examinations. Highlights of the new plan are:

1. To furnish registrants with reasonable notice, prior to induction, as to whether they will be acceptable when delivered for induction, in order that they may make final arrangements in their personal, financial and other matters.

2. To have Army examining boards make the initial complete examination, including taking of the initial blood sample for serological test.

Army examining stations will operate in the following towns in Washington: Everett, Kelso, Yakima, Wenatchee and Spokane. The examining board, known as No. 5, will make its headquarters in Taoma.

SEROLOGIC TESTS

A blood sample for serologic test will be taken by a member of the examining board and mailed in a blood tube and container to a state laboratory with request that a report be mailed to the Army examining board.

CHEST ROENTGENOGRAM

All registrants will be given chest roentgenograms by Army examining boards with facilities of civilian or health service laboratories when federal facilities are not available.

COMMUNICABLE DISEASES

Rejection for *all* communicable diseases is not warranted. Registrants will be inducted having remediable conditions which will require not more than two weeks of hospitalization and in which the disability could not later be considered as service-connected.

Registrants having acquired gonorrhea without complications after Army physical examination, will be inducted and hospitalized until cured at reception centers, within the limits of existing medical facilities at that station.

COMPOSITION OF ARMY EXAMINING BOARDS

Based on accomplishing approximately one hundred examinations per day, a traveling board will consist of the following personnel:

1 Line Officer—Commanding Officer of Army Examining station.
1 Non-Commissioned Officer—assistant to C. O. in charge of enlisted personnel.
2 Enlisted men (record checkers-interviewers).
1 Medical Officer in charge.
1 General Surgeon.
1 Internist.
1 Ophthalmologist.
1 Othorhinolaryngologist.
1 Neuropyschiatrist.
1 Dentist.

Enlisted personnel: Laboratory technician (veneral inspection serology); assistant laboratory technician (urine examination); clerk (valuables) and clerk (weights and measures).

STATE DEPARTMENT OF HEALTH

Cedric Northrop has joined the State Department of Health staff as Chief of Tuberculosis Control. He fills the vacancy created by the resignation of Kenneth Soderstrom.

Particularly since the bombing of Pearl Harbor the State Department of Health has been especially concerned with problems of medical defense, including those known as the medical emergency defense and public health defense. The Director of Health has been appointed State Medical Officer for the Civilian Defense Program by Lt. Colonel Walter J. DeLong, Executive Director of the Washington State Defense Council.

With the assistance of Drs. Dewey, Haviland and Northrop of the State Department of Health and Mr. Arthur Anderson, Executive Secretary of Washington State Medical Association, a survey of emergency medical defense in cities of over 4500 population west of the Cascades was completed. The State Medical Officer in the Civilian Defense Program appointed an advisory committee composed of a representative from pharmacists, state nurses association, Red Cross and three members of the executive committee of the Washington State Medical Association. This committee has met on two occasions and evaluated the survey made of Emergency Medical Defense in the western Washington cities, and approved a memorandum sent to chiefs of emergency medical service in each of these communities.

The director of the State Department of Health sent a letter to all health officers in the state, requesting the names, addresses and telephone numbers of public health personnel in their departments and requesting a number at which some key person in such department could be reached any time of the day or night. The communication further indicated that each health officer should communicate with the proper heads of local, political subdivisions of the state for the purpose of determining whether said local government would be willing to meet the expenses of public health personnel from place of duty to place of emergency, and to meet their salary while at place of emergency. It was pointed out that said personnel may be requisitioned by the State Department of Health to meet a public health emergency. It was further announced that requests from local jurisdictions for additional public health personnel, to meet the emergency, should be made through the State Department of Health.

Unprecedented demands have been made upon the department for issuance of certified copies of birth certificates. The department has increased its staff to meet this load. It is to be expected that for the time being there will be some delay in issuance of such certified copies.

RED CROSS BULLETIN

December 19, 1941.

To Secretaries of all County Medical Societies:

Washington State Medical Association desires to call to the attention of all physicians in the twenty-four component societies in the state that the American Red Cross has inaugurated a campaign in the nation to raise $50,000,000 as a war fund and urges that all physicians not only subscribe in their local communities but take an active part in aiding the fund raising campaign.

Because physicians more than any others know of the achievements of the Red Cross in times of catastrophe and war, it is fitting that they take an active part in this great Red Cross National War Fund campaign and to contribute generously of their funds and time.

George W. Cornett, *President*

MEDICAL NOTES

Postgraduate Lectures Cancelled. The annual University of Washington course of medical lectures, which has been held in July for the past twenty-five years, has been suspended for the coming summer. Since medical schools will continue with summer courses, men expected as lecturers will not be available. If conditions are favorable for next year, the postgraduate course will be resumed.

In Honor of Dr. Sharples. Children's Orthopedic Hospital of Seattle has dedicated the third floor as the "Sharples Surgical Division" in honor of Casper W. Sharples' thirty-four years' service with this institution. A tablet in commemoration of this service has been attached to his portrait at the entrance to the hospital.

Bremerton Loses Two Hospitals. Shortly after Bremerton city commissioners voted to turn over a new federally financed hospital to Kitsap county, it was discovered that the state constitution prohibited cities from owning stock in a corporation. Therefore, it became necessary for the city to return to the B. F. Harrisons the 526 shares of stock in the Olympic hospital which they had recently donated to the city. Thus, the city in a short time found itself without any municipal hospital service.

New Bremerton Hospital. Construction will soon start on Kitsap County's public hospital in West Bremerton. It will be complete with outpatient department, modern clinics and laboratories.

New Hospital Opened. A new ten-bed hospital, equipped for modern surgery, obstetrics and emergency cases, has been opened at Goldendale. It is under the supervision of Mrs. Hazel Johnson, formerly of Kelso.

Hospital Opens. The J. C. Biles Memorial hospital at Omak was opened formally with a large crowd of visitors November 31. The building is an expansion of the original Omak hospital which was built in 1923 for service to employes of the Biles-Coleman Lumber Company. It was recently enlarged and remodeled.

Health Office Space Enlarged. Remodeling work has been contracted for at the Walla Walla county court house to provide additional space for the county health office.

New Whidby Island Hospital. Plans have been made for a forty-bed community hospital for Whidby Island, to be located at Oak Harbor. It comes under an appropriation before Congress to build hospitals in isolated communities.

Crippled Children Clinic. Examination of crippled children was held at St. Elizabeth's hospital, Yakima, November 30. Some eighty boys and girls under fourteen years of age were examined in the clinic.

New Hospital Staff. St. Elizabeth's hospital at Yakima held a meeting of the staff November 17, at which Willard B. Rew was elected president to succeed W. Shuler Ginn. Other officers were vice president, Leland S. Harris, and secretary-treasurer, F. G. LeFor.

New Service for Indigents. County Commissioners of King County have announced that indigent victims of accidents may be cared for by nearest doctor or hospital and the service will be paid by the State Department of Public Welfare.

Weddings. Austin B. Kraabel and Miss Phyllis Forsander, both of Seattle, were married December 10. William C. Kintner of Seattle and Miss Jane Hilton of Tacoma were married in the latter city December 12.

OBITUARIES

Dr. Charles E. B. Flagg of Vancouver died December 6, aged 71. He was born in South Carolina and received his medical education at the University of Georgia Medical School, graduating in 1890. He served as first lieutenant in the Army Medical Corps in the Spanish-American War and in the Philippines during the China insurrections. He resigned from the Army in 1908 and moved to Vancouver. During the World War he was a member of the Medical Corps. He returned to practice in Vancouver after the war but retired several years ago.

Dr. George Francis Pierrot of Seattle died December 9, age eighty years. He located for practice in the Ballard section of Seattle in 1899. In 1916 he moved to Wahkiakum County, where he served as health officer until 1930. Then he moved to Eldorado County, Nevada, where he served as health officer until 1937, at which time he returned to Seattle.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Cowlitz County Medical Society held its regular dinner meeting, December 17 at Hotel Monticello, Longview.

Guest speakers were M. C. Riddle, Associate Professor of Medicine at University of Oregon Medical School, who spoke on "Infectious Mononucleosis"; and Homer P. Rush, Assistant Professor of Medicine at University of Oregon Medical School, who spoke on "Serial Examinations," in which he emphasized the necessity of repeated examinations in making a diagnosis.

Captain Smith of Longview, Texas, a physician with the army stationed in Longview, was a guest at the meeting.

KITSAP COUNTY MEDICAL SOCIETY

Joint meeting of Kitsap County Medical Society and Woman's Auxiliary to Kitsap County Medical Society was held at the home of T. C. Baldwin, November 10. The groups held separate business sessions and then joined to hear V. G. Backman from the Navy Yard, Russell Wilson from Kitsap County Health Department and Drs. Dewey and Evans from Washington State Health Department.

KING COUNTY MEDICAL SOCIETY

The first monthly meeting of King County Medical Society was held December 1 in the auditorium of the Medical & Dental Building, Seattle, at 8:15 p. m., President Irvin A. Weichbrodt presiding. L. D. Frey was elected to membership. Application was presented from F. C. Gorham.

The program consisted of a paper by Homer V. Hartzell on "Ten Year Report of the Tumor Clinic of King County Hospital." The subject was introduced by Donald V. Trueblood who has been in charge of the clinic since its inception.

The first group of cases included carcinomata of face and hands, including basal and squamous cell tumors. This group has had the largest number of permanent cures. The second group comprise carcinomata of accessible regions, such as uterine cervix, vagina, tongue, lip, bladder and anus. Best results were attained by radium therapy.

The third group were highly malignant tumors as lymphomata, lymphogranulomata or those of reticuloendothelial origin. No permanent cure was obtained, but marked palliation. The fourth group included those in which radiation and surgery were applicable, as carcinoma of the breast, uterine fundus, vulva, penis, scrotum. The fifth group included those which were improved by radiation therapy but not cured, as carcinoma of larynx, prostate, thyroid, pharynx, salivary glands, rectum and cerebral tumors. In cases with mutliple metastases it was most considerate to give no treatment.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of the Pierce County Medical Society was held in the Medical Arts Auditorium, Tacoma, on December 9, with T. K. Bowles, President, in the chair.

Hance F. Haney, Professor of Physiology, University of Oregon Medical School, opened the program with a discussion of "The Practical Significance of Cardiovascular and Respiratory Reflexes."

John A. Gius, Associate Professor of Surgery, University of Oregon Medical School, followed with a presentation of "Postoperative Pulmonary Complications."

Tacoma's medical civilian defense organization was discussed by A. L. Schultz. C. G. Trimble spoke of first aid training of lay persons.

W. E. Steele, of the Department of Labor and Industries, discussed the proposal of having assistant medical advisers throughout the state. H. J. Whitacre was appointed assistant director for Tacoma, with R. C. Schaeffer as his alternate.

SNOHOMISH COUNTY MEDICAL SOCIETY

Snohomish County Medical Society held its annual banquet in Everett December 9, at the Golf and Country Club. H. P. Howard, oldest practicing physician in the county, was guest of honor. His portrait, painted by Mrs. Mary G. Allen of Lake Stevens, was unveiled.

The following officers were elected for the ensuing year: President, John E. Flynn; vice president, E. B. Chase; secretary-treasurer, George K. Moore.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society held its regular meeting at Marcus Whitman Hotel, Walla Walla, December 1. Oliver M. Nisbet, Associate Professor of Medicine at University of Oregon Medical School, gave a paper on "The Acute Abdomen." J. C. Lyman, Walla Walla surgeon, led in the discussion of this important subject.

YAKIMA COUNTY MEDICAL SOCIETY

Yakima County Medical Society held its regular Monday meeting at Yakima, December 15. B. C. Koreski was elected president for the coming year; Shuler Ginn, vice-president; and Leland S. Harris, secretary-treasurer. Named to the Board of Directors were: E. S. West, Kay England, James P. Thompson, and Herbert C. Lynch.

An Emergency Defense Committee has been chosen and is composed of Rex McClure, Chairman; F. H. Brush, W. K. Cocklin, and J. F. Scott.

Henry H. Dixon of Portland was the guest speaker and his subject was "Mental Aberrations."

After the meeting members were entertained in the home of the retiring president, Dr. Lynch.

WOMAN'S AUXILIARY

CHELAN COUNTY AUXILIARY met at the home of Mrs. E. M. Bevis in Wenatchee on Dec. 3. The group heard Mrs. Elizabeth Wiley, Assistant extension agent in Home Economics for Chelan County, talk on her work in the county. At this meeting it was reported that four Auxiliary members worked on the local Red Cross drive.

YAKIMA COUNTY AUXILIARY held its annual Christmas party December 15 at the home of Mrs. L. L. Lugar. Dinner was served to twenty-nine members and cards followed as the evening's entertainment.

SPOKANE COUNTY AUXILIARY members were shown demonstrations of Christmas flower arrangements at their meeting in December at the home of Mrs. Philip Greene. Mrs. R. E. Ahlquist, who is corresponding secretary of the National Auxiliary and a member of the Spokane Auxiliary, reported on the national board meeting she had attended in the east in November.

WALLA WALLA AUXILIARY held a dinner meeting Dec. 11 at the home of Mrs. J. T. Rooks, who provided the educational program. A clever skit with Hygeia portrayed as a Greek Goddess of Health illustrated her talk.

MRS. GEORGE J. VANDENBERG,
State Publicity Chairman

SEATTLE SURGICAL CLUB

The annual Meeting of Seattle Surgical Society will be held Friday and Saturday, January 23 and 24, at King County Hospital. There will be dinner meetings both nights at Rainier Club. In addition to the usual brief papers by various members, this year's program will include four one-hour symposia on popular subjects which will be open to general discussion and questions by guests.

MEDICAL NOTES

The Boise Physicians Club held a meeting December 11, at the Owyhee Hotel. A program on Civilian Defense was heard. The speakers were Jess Hawley, Chairman of Ada County Civilian Defense Council, and Mayor Westerman Whillock of Boise. Discussion of the policies of the City-County Health Unit was held. A Policy Committee was appointed to confer with the Director of the Health Unit. The following officers were elected: President, Robert Smith; vice-president, Ralph Jones; secretary-treasurer, S. M. Poindexter.

County Health Officers Resign. Both county-city health officer and county physician of Clallam county and Port Angeles have resigned. A. E. Eyres, county health officer, is to take additional work in public health in an eastern school and L. A. Schueler will resume private practice. Donald Black has been appointed county physician.

Addition to State Hospital. A utility building to cost $160,000 will be built at Blackfoot State Hospital when priorities can be obtained for structural steel. It is hoped to begin at an early date.

Miss Helen A. Smith, R. N., since 1922 associated with St. Luke's Hospital, Boise, as assistant Superintendent and Director of the School of Nurses, died December 16 of pneumonia, after an illness of two weeks.

Locations. R. R. Merrell, for seven years Fremont County physician, has located for practice at Pocatello. He was formerly a resident of Brigham City, Utah. Douglas W. Owen has located for practice at St. Anthony. He came from Jackson, Wyoming, where he had been in charge of a CCC camp. D. E. Harris has located for practice at Pocatello. He practiced for a number of years in Chicago. D. H. Davies, a recent graduate of University of Nebraska Medical School, has located for practice at Boise, where he will be associated with Alfred H. Budge.

H. B. Daines announced opening of offices in Eastman Building, Boise, for practice of eye, ear, nose and throat.

Date of State Meeting. It has been decided to hold the annual meeting of the State Association at Sun Valley, September 16-19.

SOCIETY MEETINGS

NORTH IDAHO MEDICAL SOCIETY

North Idaho Medical Society held a meeting at Lewiston December 22. Twenty-five members were in attendance. The program consisted of a paper by Joseph Lynch and Melvin Aspray of Spokane on "The X-ray and Neurological Diagnosis of Brain Lesions."

POCATELLO MEDICAL SOCIETY

Pocatello Medical Society held a meeting at Pocatello December 11. The following officers were elected for the ensuing year: President, J. V. Clothier, Pocatello; vice-president, W. W. Beck, Jr., Blackfoot; secretary, W. L. Olsen, Pocatello; censor, E. N. Roberts, Pocatello.

COMMUNICABLE DISEASES ARE BIGGEST DEFENSE PROBLEM

"Communicable diseases, including those which are primarily pediatric (pertaining to diseases of children) conditions, are a far greater problem of defense and war than are injuries incurred in battle," Wilburt C. Davison, M.D., Durham, N. C., declares in the November issue of *War Medicine,* in an article suggesting a program for combating such conditions. *War Medicine* is a bimonthly publication published by the American Medical Association, Chicago, in cooperation with the Division of Medical Sciences of the National Research Council, Washington, D. C.

"Perhaps in the present emergency a consulting pediatrician who has had experience in preventing communicable diseases among children should be appointed (to the Army)," Dr. Davison says. "In the light of the figures on the frequency of children's diseases in the Army and Navy during the last war, this suggestion is not as foolish as it may seem."

Communicable diseases in both the Army and the Navy of the United States during World War I ,he points out, were responsible for more hospital admissions, deaths and days lost than were injuries of battle. One in every three soldiers and sailors had one or more of these diseases, and one in every 133 in the military and naval services died of infectious disease.

"Although the influenza, pneumonia, bronchitis and tonsillitis of the epidemic of 1918 were responsible for most of the morbidity (illness) and mortality," Dr. Davison says, "half a million soldiers and sailors were affected by the purely pediatric diseases, especially mumps, measles, scabies, rheumatic fever, vaccinia (cowpox), rubella, (German measles), scarlet fever, diphtreria, meningitis, dysentery, impetigo and chickenpox, in that order. These twelve children's diseases affected twice as many men in the Army and Navy as did wounds and half as many as did influenza. To reduce this incidence of infectious disease in troops, pediatricians would recommend the adoption of the preventative measures which have been found to be efficacious for children. Some of these precautions at present are being used in the Army and Navy, but more of them should be applied . . ."

Dr. Davison makes the following specific recommendations: As soon as a recruit is inducted in the service he should have tests for diphtheria, scarlet fever, tuberculosis and syphillis, be vaccinated against smallpox and be innoculated with typhoid-paratyphoid vaccine and tetanus toxoid or a combined tetanus-diphtheria toxoid. A skin test for sensivity, of course, should be done first. Alternate recruits should receive influenza vaccine in order that data on its immunizing value may be collected.

He also advises that the efficacy of the immunization against diphtheria should be tested three months after the inoculations and that the scarlet fever tests should be repeated annually. If these tests become positive inoculations should be repeated. Regarding tests for tuberculosis, he says that x-ray films of the chest without tuberculin tests are not nearly as accurate in the diagnosis of the disease and he advises that both be used.

Regarding the service records, Dr. Davison advises that the dates of inoculations, the results of the tests and an accurate statement that the recruit has or has not had measles, German measles, chickenpox, mumps, whooping cough, scarlet fever and rheumatic fever be entered thereon.

CLINICAL FORUM

PEDIATRIC PROBLEM

T. A., aged 7 months, 9 days, was brought to the office because he had been "sick a week," had gradually refused food and now will take nothing by mouth, not even water.

History: Normal birth, weight 7 pounds, 5½ ounces. Nursed but a week or two and then developed quite well and satisfactorily on an evaporated milk formula, weighing 16 pounds at 6 months of age.

Examination: Baby is listless. No interest in surroundings, eyes sunken, marked picture of a real sick infant. Weight 14 pounds, 6½ ounces. Temperature 99.6°.

Head: Eyes with dark circles, ears normal, teeth 0/2, tongue a little coated, moist, tonsils small, not particularly reddened. Mucopus to be seen in pharynx which also presented a catarrhal appearance, no acetone on breath. Neck: No goiter present, nor cervicals. Chest: Ribs rather prominent. Heart and lungs negative.

Abdomen: Full, not distended. Organs normal, no muscular spasm nor evidence of tenderness. One plus inguinal glands each side.

G. U.: Circumcised, no pathology present.

Reflexes: Normal. There were no other glandular enlargements than those mentioned above.

His subcutaneous fat was gone, leaving his grayish, yellow-colored skin in folds over limbs and abdomen. This baby is sick. He needs immediate treatment.

What is your diagnosis and treatment?

COMMENTS ON OBSTETRIC PROBLEMS IN DECEMBER ISSUE

First commentator reviews the case as follows:

The problem stated in the December issue concerned a white, 33 years old primipara who had a past history of definite chronic nephritis and who presented herself to her physician on October 2, approximately six weeks pregnant. The question involved was, how should this case be conducted. Let us review the facts.

This woman has a history of chronic nephritis lasting over a period of at least eleven years. The laboratory findings give evidence of a definite renal insufficiency as demonstrated by the ability to concentrate only to a specific gravity of 1.020. The fact that she has four plus albumin in her urine is evidence that some of the damaged renal units are still functioning to a degree.

There are clinical signs of renal insufficiency, evidenced by a blood pressure of 146/100 and pitting edema of both lower extremities extending to the midcalf area. The correct treatment of this patient is clear cut. Her pregnancy should be terminated at the earliest possible moment. The reasons for this statement are as follows:

It has been shown by Stander and Peckham[1] and by McKelvey and MacMahon[2] that the maternal mortality due to chronic nephritis or nephrosclerosis, when studied over a ten year period, is 40 per cent. That is, 40 per cent of women, who show clinical signs of renal insufficiency during pregnancy, die within ten years after becoming pregnant. This woman should be told that she faces a 40 per cent, ten year mortality. The longer her pregnancy is allowed to continue after clinical evidence of renal insufficiency has been demonstrated, the greater will be her percentage of mortality and the lower will be the number of years to be expected. To plan to allow this pregnancy to continue until a viable child may be obtained places the mother in entirely too much jeopardy.

There is no more reason to wait for actual physical signs of kidney failure in a patient with chronic nephritis before terminating the pregnancy than there is to wait for demonstrable axillary metastasis before removing a cancer of the breast.[3]

Second commentator discusses the case:

The clinical history and laboratory findings in the case are obviously those of chronic nephritis of moderate degree. Most obstetricians agree that this complication of pregnancy is a serious one and, although a certain number of women with chronic nephritis may go through pregnancy without complications, it is a distinctly hazardous proposition. If the patient in question is permitted to continue with the present pregnancy, there is almost certain to be some aggravation of the nephritis with increased renal damage and further impairment of kidney function following pregnancy.

The likelihood of intrauterine death of the fetus during the last trimester of pregnancy is another distressing feature in the prognosis which must be considered and may occur, despite the most careful supervision. Today the majority of obstetric clinics of national reputation warn patients with chronic nephritis against the hazards of pregnancy and if it occurs advise a therapeutic abortion, if the pregnancy is not too far advanced.

Third commentator holds these views:

This fits the second classification under Group A recommended by the American Committee on Maternal Welfare, that is, renal disease not peculiar to and antedating the pregnancy. This type of case is notorious for causing serious trouble, usually before viability of the fetus. Although this case is presented early in pregnancy, the findings indicate active kidney disease and the second urine concentration test indicates progression of the disturbance. It is stated that kidney pathology has existed over a long period of time.

My recommendation in this case would be a prompt termination of the pregnancy, preferably by abdominal hysterotomy with sterilization procedure. It is unfortunate that she has received conflicting advice regarding pregnancy, and it is possible this advice was given without consultation with an obstetrician. Or it may have been given at a time when for the moment the prognosis seemed less grave. She should be told that, regardless of being given the best of care, bed rest and every possible advantage, the disease is progressive, either to the point of fatality or of greatly diminished life expectancy, if pregnancy is permitted to continue or if repeated pregnancy occurs. Further, it should be emphasized that there is frequent loss of the baby in such cases, whether or not the mother survives.

If the patient persists in her desire to continue with the pregnancy in spite of such advice, let no effort be spared to protect her. It must be admitted that she might succeed in the face of the odds and produce a healthy baby, though her chances of rearing the child would not be good. The attending obstetrician should not attempt to carry the responsibility alone. He should recommend the services of an able consultant and take full advantage of his presence throughout the course of the pregnancy.

The above commentator proffers this additional comment: "I have read these problems in NORTHWEST MEDICINE as they have come out and always find them interesting. I think they occupy the kind of spot filled by panel discussions at meetings, of which I am much in favor."

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[1] Stander, H. J. and Peckham, C. H.: Prognosis in Nephritis Complicating Pregnancy. Am. J. Obst. & Gynec., 22:626-636, Oct., 1931.

[2] McKelvey, J. L. and MacMahon, H. E.: Study of Lesions in Vascular System in Fatal Cases of Chronic Nephritic Toxemia of Pregnancy. Surg., Gynec. & Obst., 60:1-18, Jan., 1935.

[3] Holman, A. W.: Measurement of Kidney Function before, during and after Pregnancy. Am. J. Surg., 40: 365-369, May, 1938.

Fourth commentator offers these comments:

This presents a severe tax on one's innate and developed judgment. One is obliged to acknowledge the diametrically opposed suggestions of different well-known and highly reputable institutions but must go on his own. At best, any patient with a "chronic low-grade elevation of blood pressure," and whose history reveals no chronic infection, presents a picture of a gestation and parturition with very questionable, if not poor end-results. These patients frequently are very desirous of a family, possibly because they have a hidden desire for children and a premonition that they cannot have them. One may promise the patient and oneself the best possible care, but one is unlikely to get the patient along far enough to deliver a viable child. Experience tells us that, whatever gestation may do to a girl under such circumstances, and we know too little about it, nevertheless, she is going to sustain some very serious injury to her excretory functions. Especially does that hold true with the liver, as more and more damage is done to her kidneys. It is a great question whether this is due to difficulty in normal kidney functions, or that some influence from metabolic products of the fetus or some undefined hormone from the placenta may be liable for accounting of a deleterious influence upon the cellular structure of the kidney and liver particularly, with perhaps other body structures.

If this woman should miscarry, the problem would almost surely come up again. She will once more approach her physician relative to prognosis of another conception and pregnancy. We know that her chances of going through it and preserving her life is poor, and her sustaining of very definite damage to her vital organs is 100 per cent, resulting in shortening her life. All this is suggested, without knowing the actual, clear-cut condition in which her kidneys are functioning.

Bed rest, no medicines known to science today, nor any treatment whatsoever will change that situation. Recently, Levine has called attention to the fact that fathers' blood frequently contains R. H. plus bodies and mothers' R. H. minus, and therein may lie something of profound significance. It is becoming well known that these factors, when integrated with the fetus blood, profoundly affect the mother's blood system with resultant bad effects on kidneys.

Conclusions of Case: This patient aborted completely and spontaneously at approximately the third month. The subsequent course has been uneventful. The problem now is whether or not to advise her against future pregnancies, in view of the advice she received at the University of Michigan to the effect that pregnancy probably would make no more inroads on her kidney pathology.

BOOK REVIEWS

The Toxemias of Pregnancy. By William J. Dieckmann, M.D., Associate Professor of Obstetrics and Gynecology, The University of Chicago, etc. With Fifty Text Illustrations and Three Color Plates. 521 pp., $7.50. The C. V. Mosby Co., St. Louis, 1941.

This is the latest and most complete volume reviewing the clincial and pathologic theories of the toxemias of pregnancy. The style adopted is a chapter presentation of published knowledge on each phase of the toxemias, followed by wise and conservative conclusions. The appearance of many author references in the text somewhat slows the reading and might be criticized by those readers searching for the "meat" in the book. The complexities of the problem, however, could not be handled in a better manner. The bibliography is most adequate.

The chapter on the history of the treatment of eclampsia is particularly good in giving the chronologic development of the therapies since the year 1668. The book will appeal as a teaching or reference volume for the obstetrician. The print is large and clear and the illustrations are satisfactory.

A. F. Lee.

Treatment of the Patient Past Fifty. Ernst P. Boas, M.D., Associate Physician, Mount Sinai Hospital, New York City, etc. 324 pp., $4. The Year Book Publishers, Inc., Chicago, 1941.

That care of the aged has become increasingly important is evidenced by recent books dealing particularly with their ailments. They constitute an increasing proportion of the physician's practice. In consequence of advancing years, chronic diseases are naturally encountered more frequently. Commonly they are more complex than acute infectious diseases and those of younger years. This volume confines itself to diseases which are practically limited to the period of senescence. Most attention is paid to diseases of the cardiovascular system, the lungs and the gastrointestinal tract. Also the genitourinary tract, bones and joints are duly considered. In discussing these conditions little space is devoted to etiology and pathology. Diagnosis and treatment are specially emphasized and considered more in detail.

Functional Pathology. By Leopold Lichtwitz, M.D., Chief of the Medical Division of the Montefiore Hospital; Clinical Professor of Medicine, Columbia University, New York. With 157 Illustrations and 39 Tables. 539 pp., $8.75. Grune and Stratton, Inc., New York, 1941.

Functional pathology, the science of pathologic manifestations during life, should be a part of every physician's office library. While the entire field of functional pathology has not been covered, the more common and important functions have been described with interpretations from actual cases culminating thirty years of intensive study. This book, written from a purely personal viewpoint, should encourage and stimulate discussion, since it is not in complete agreement with the accepted views of the medical man.

J. M. Bowers.

Effective Living. By C. E. Turner, A.M., Sc.D., Dr. P.H., Professor of Biology and Public Health, Massachusetts Institute of Technology, etc., and Elizabeth McHose, B.S., M.A., Director of Physical Education for Girls, Senior High School, Reading, Pennsylvania. With 164 Illustrations. 432 pp., $1.90. The C. V. Mosby Company, St. Louis, 1941.

"The purpose of this book is to help youth discover ways of effective living." Youth demands facts. Those of health are fascinating when interestingly presented. This book presents much factual material given in an interesting and attractive manner. The three parts deal with "Effective Living for the Individual," "Effective Living in the Family," "Effective Living in the Community." Advice for the individual deals with such common principles as exercises, care of the skin; good teeth touches on tooth powders and mouth washes, with advice relative to the dentist. How to behave with other individuals contains good sense. Family relations begin with courtship and engagements, with suggestions leading to domestic felicity. Discussing accidental deaths, a diagram shows that in 1939 34 per cent were killed in the home, 35 per cent by motor vehicles, 17 per cent from occupational causes. Sanitation and first aid are among the subjects considered.

SYNOPSIS OF THE PREPARATION AND AFTERCARE OF SURGICAL PATIENTS. By Hugh C. Ilgenfritz, A.B., M.D., Instructor in Surgery, Louisiana State University School of Medicine, etc., and Rawley M. Penick, Jr., Ph.B., M.D., F.A.C.S., Professor of Clinical Surgery, Louisiana State University School of Medicine, etc. 532 pp., $5. The C. V. Mosby Company, St. Louis, 1941.

It is well known that the successful outcome of surgical procedures are often determined by preparation for the operation. Careful examination may defer an operation until some obvious defect is remedied. The life-saving results of postoperative care are obvious to every surgeon. This is especially illustrated in the treatment of intestinal obstruction.

Each of the twenty chapters in this book deals with a particular condition, such as shock, transfusion, preoperative and postoperative measures, minor and major postoperative complications, conditions of chest and intestinal tract. Many new therapeutic procedures are briefly outlined and references made to newer medicinal preparations, such as the sulfonamide derivatives. Information is available in this book which should be helpful to the surgeon with suggestions for pre- and postoperative care of patients.

THE TREATMENT OF INFANTILE PARALYSIS IN THE ACUTE STAGE. By Elizabteh Kenney. 285 pp. Bruce Publishing Co., Minneapolis, 1941.

Sitser Kenney advocates immediate gentle carefully controlled and increased passive with later active motion to all joints to prevent contractures resulting from immobilization. Also the use of hot moist packs over bellies of muscles in spasm (ordinarily considered tender but unparalyzed muscles) to relieve spasm, decrease soreness and prevent contractures. Early activity and ambulation without braces is advocated. A well trained staff of nurses and physical therapy personnel who understand the principles of treatment is absolutely essential. Thus the patients are very meticulously followed and considerately handled by Nurse Kenney and her staff.

Her treatment has definite merit. It will gradually be accepted widely. As compared to our previous methods of complete protection and immobilization in the acute stage, the Kenney treatment will see the patient at his maximum state of muscular efficiency earlier. Most deformities can be prevented and some deformities corrected by her methods. D. G. LEAVITT.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. Volume IV., New Series Four. 314 pp., $3. J. B. Lippincott Company, Philadelphia, 1941.

This well known, informative publication is divided equally between original contributions, which present eleven papers, and clinics presented by the faculty of the University of Minnesota Medical School, dealing with ten clinical reports. A variety of subjects are included treating various heart conditions, cancer of stomach and other gastric lesions, hemolytic jaundice, diseases of lungs and other pathologies. In this established volume one can always find something of interest and value.

SYNOPSIS OF ALLERGY. By Harry L. Alexander, A.B., M.D., Professor of Clinical Medicine, Washington University School of Medicine, St. Louis. Illustrated. 246 pp., $3. The C. V. Mosby Company, St. Louis, 1941.

The term "allergy" was introduced by Von Pirquet in 1906, which he defines as "a changed reaction capacity which the human or animal organism gains through recovery from disease or through treatment with foreign substances." The term atopy means that "in every instance symptoms result from contact between a foreign, nonbacterial substance and tissues specifically sensitized to it." It is said that hay fever is the only disorder which is solely atopic, most other diseases being possibly due to other causes.

The purpose of this book is to present the subject of allergy in terms of present day thought. The present day attitude is to regard allergy as human hypersensitiveness in all its forms. Special attention is paid to bronchial asthma, hay fever, rhinitis, gastrointestinal allergy, allergic dermatoses. Diagnosis and treatment form the substance of discussions.

THE MARCH OF MEDICINE. New York Academy of Medicine Lectures to the Laity, 1941. 154 pp., $2. Columbia University Press, New York, 1941.

For the past six years the New York Academy of Medicine has sponsored a series of medical lectures to the laity. This volume contains the six of this series. Although prepared for the laity, their substance offers interest as well to the medical man. The titles are as follows: Humanism and Science, Paracelsus in the Light of Four Hundred Years, Psychiatry and the Normal Life, Philosophy as Therapy, The Promise of Endocrinology and What We Do Know About Cancer.

SHOCK TREATMENT IN PSYCHIATRY. By Lucie Jessner, M.D., Ph.D., Resident Psychiatrist, Baldpate, Georgetown, Mass., etc., and V. Gerard Ryan, M.D., Associate Psychiatrist, Elmcrest Manor, Portland, Conn., etc. Introduction by Harry C. Solomon, M.D., Clinical Professor of Psychiatry, Harvard Medical School. 149 pp., $3.50. Grune & Stratton, Inc., New York, 1941.

It is stated that this monograph is not a complete treatise on "shock therapy," but is a practical review of a subject which is of more than passing interest. The three parts of the book deal respectively with insulin therapy, metrazol convulsive treatment and electric convulsive therapy. Indications and contraindications are considered for each with complications which may result. Technic is detailed in each method of treatment. Not listing references in the text, a bibliography is presented containing 353 writings which ought to offer a complete review of the whole subject.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

REQUIREMENTS FOR ARMY AND NAVY MEDICAL SERVICE

During recent months there has been much discussion regarding requirements for emergency service on the part of physicians, hospital interns and medical students. There has been uncertainty and some conflict of published requirements which have rendered the situation uncertain for many available men. It has been stated that an army of four million men would require a total of about thirty-two thousand physicians taken from civil practice. We may be required to respond to such a demand. Herewith is published the official announcement answering all questions which have been propounded concerning army and navy service. Every practicing physician, hospital intern and medical student should read carefully this announcement to ascertain what may be expected of them.

RECOMMENDATIONS TO ALL PHYSICIANS WITH REFERENCE TO THE NATIONAL EMERGENCY

I. Medical Students

A. All students holding letters of acceptance from the Dean for admission to medical colleges and freshmen and sophomores of good academic standing in medical colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. This step is necessary in order to be considered for deferment in Class II-A as a medical student. If local boards classify such students in Class I-A, they should immediately notify their deans and if necessary exercise their rights of appeal to the Board of Appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the State Director and if necessary to the National Director of the Selective Service System. These officers have the power to take appeals to the President.

B. Those junior and senior students who are disqualified physically for commissions are to be recommended for deferment to local boards by their deans. These students should enroll with the Procurement and Assignment Service for other assignment.

C. All junior and senior students in good standing in medical schools, who have not done so, should apply immediately for commission in the Army or the Navy. This commission is in the grade of Second Lieutenant, Medical Administrative Corps of the Army of the United States, or Ensign H. V. (P) of the United States Navy Reserve, the choice as to Army or Navy being entirely voluntary. Applications for commission in the Army should be made to the Corps Area Surgeon of the Corps Area in which the applicant resides and applications for commission in the Navy should be sent to the Commandant of the Naval District in which the applicant resides. Medical R. O. T. C. students should continue as before with a view of obtaining commissions as First Lieutenants, Medical Corps, upon graduation. Students who hold commissions, while the commissions are in force, come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service Act. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education and at least 12 months of internship.

II. Recent Graduates

Upon successful completion of the medical college course, every individual holding commission as a Second Lieutenant, Medical Administrative Corps, United States Army, should make immediate application to the Adjutant General, United States Army, Washington, D.C., for appointment as First Lieutenant, Medical Corps, Army of the United States. Every individual holding commission as Ensign H.V. (P), U. S. Navy Reserve, should make immediate application to the Commandant of his Naval District for commission as Lieutenant (J.G.) Medical Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant, (J.G.) in the regular Medical Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D.C.

III. Twelve Months Internes

All internes should apply for a commission as First Lieutenant, Medical Corps, Army of the United States, or as Lieutenant (J.G.), United States Navy or Navy Reserve. Upon completion of 12 months internship, except in rare instances where the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity as military officers; those who failed to apply for commission are liable for military service under the Selective Service Acts.

IV. Hospital Staff Members

Internes with more than 12 months internship, assistant residents, fellows, residents, junior staff members, and staff members under the age of 45, fall within the provisions of the Selective Service Acts which provide that all men between the ages of 20 and 45 are liable for military service. All such men holding Army commissions are subject to call at any time and only *temporary deferment* is possible, upon approval of the application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable. All such men holding Naval Reserve commissions are subject to call at any time at the discretion of the Secretary of the Navy. Temporary deferments may be granted only upon approval of applications made to the Surgeon General of the Navy.

All men in this category who do not hold commissions should enroll with the Procurement and Assignment Service. The Procurement and Assignment Service under the Executive Order of the President is charged with the proper distribution of medical personnel for military, governmental, industrial, and civil agencies of the entire country. All those so enrolled, whose services have not been established as essential in their present capacities, will be certified as available to the Army, Navy, governmental, industrial, or civil agencies requiring their services for the duration of the war.

V. All Physicians Under Forty-five

All male physicians in this category are liable for military service and those who do not hold commissions are subject to induction under the Selective Service Acts. In order that their service may be utilized in a professional capacity as medical officers, their positions in civil life should be filled or provisions made for filling their positions, by those who are (a) over 45, (b) physicians under 45 who are physically disqualified for military service, (c) women physicians, and (d) instructors and those engaged in research who do not possess an M.D. degree, whose utilization would make available a physician for military service.

Every physician in this age group will be asked to enroll at an early date with the Procurement and Assignment Service. He will be certified for a position commensurate with his professional training and experience as requisitions are placed with the Procurement and Assignment Service by military, governmental, industrial or civil agencies requiring the assistance of those who must be dislocated for the duration of the national emergency.

VI. All Physicians Over Forty-five

All physicians over 45 will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those Agencies.

The maximal age for original appointments in the Army of the United States is 55. The maximal age for original appointment in the Naval Reserve is 50 years of age.

All inquiries concerning The Procurement and Assignment Service should be sent to The Executive Officer, 5654 Social Security Building, 4th and Independence Avenues, S.W., Washington, D. C., and not to individual members of the Directing Board or of committees thereof.

UNWARRANTED LAYMAN'S MEDICAL OPINION

Peculiar things are apt to happen when persons of no medical knowledge begin to meddle in fields about which they are not wholly or only partially informed. One example of the fallacy of such interference in good medical care comes to light in the attitude of the management of the Boeing Aircraft Company of Seattle toward the Wassermann and allied tests.

The Wassermann reaction has long been recognized as a useful tool in diagnosis of syphilitic infection. It remains, however, a laboratory procedure, subject to all the fallacies and errors of misinterpretations which attend any such tests. Syphilologists have long since discarded the idea that diagnosis of syphilis comes out of a test tube. Indeed, the test is constantly being relegated farther and farther into the background in favor of a careful and intelligent survey of the patient's history and physical findings.

Moore,[1] in his recent text on "The Modern Treatment of Syphilis" states: "If syphilis were the only condition which causes serum to react with mammalian tissue lipoids, and if there were no other qualifications to a report of positive, then every person giving such a reaction could automatically be diagnosed as syphilitic. This, however, is far from the case."

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[1] Moore, J. E.: The Modern Treatment of Syphilis. P. 519. Charles C. Thomas, Springfield, Ill.

The false positive has long been recognized among those familiar with handling syphilis. An important number of perfectly normal people, who have never been infected by the Treponema pallidum, give a positive test. Certain conditions, such as malaria, infectious mononucleosis, upper respiratory infections, vaccinia and certain serum treatments may cause false positive tests. Furthermore, it is even common knowledge among lay persons that a victim of syphilis becomes noninfectious very quickly after institution of treatment, while his positive Wassermann may persist for a long time or even indefinitely.

Newer conceptions, based on sound clinical experience with thousands of cases, now indicate that there has been much overtreatment in the past and henceforth no attempt should be made to secure a negative Wassermann. Moore states: "To prolong treatment over a period of many years in the hope of reversing an irreducibly fixed positive test to negative is in many instances both unnecessary and unwise."

Now, in the face of all this evidence and much more the Boeing Aircraft Company insists that it shall not hire any person who has a positive Wassermann reaction. No discrimination whatever is made as to whether this may be a false positive, a persistent positive in a latent case after ample treatment or a normally positive reaction in one taking regular treatment. The management has refused to accept the opinion of its own medical department and has also flatly refused to cooperate with the state health department in its handling of such cases. It maintains this harsh and arbitrary attitude without reason or explanation, and will not allow its own medical department to use its discrimination in employing otherwise highly qualified persons who may be unfortunate enough to have a positive Wassermann.

In times such as these, when construction of airplanes is so vital to the defense of the country and manpower is so difficult to obtain, such an attitude is, to say the least, inexcusable. For the good of the country it is hoped that the management of Boeing Airplane Company does not extend its obstinate refusal to accept expert advice into other aspects of the defense program.

EXPANSION OF AID TO WASHINGTON'S SENIOR CITIZENS

Two developments in the care of pensioners under provisions of Washington's Initiative 141, providing for senior citizens, may be of general interest. A recent decision in the Thurston County superior court that pensioners are entitled to free medicines will not be appealed by the State Attorney General, Smith Troy. This was a test case, in which a pensioner had been spending from three to nine dollars a month for medicines prescribed for him. The court decided that the intent of the initiative was to provide medicine. It was also contended that these cases previously did receive free medicine from the county hospitals. It is estimated that cost of providing medicine will be approximately $20,000 a month. The extent to which the Department of Social Security will go in providing such things as vitamin pills and similar tonics has not been determined.

Another development of interest is the preparation of an additional initiative to replace 141. This has been filed with the Secretary of State and signatures are now being obtained. The new initiative will provide that, if the cost of living as shown by national averages of the United States Department of Labor and Labor Statistics increases after January 1, 1942, by five per cent or more, grants shall be increased proportionately with each such five per cent increase.

Additional care is also provided for as follows:

> "The department shall provide for such persons eligible to receive a senior citizen grant, blind aid grant, child welfare grant, public or general assistance grant or any other form of public aid or assistance administered by or under the supervision of the department and to each person dependent upon such grant, aid or assistance, whether the recipient of such grant, aid or assistance or as a dependent of the recipient or otherwise; *medical, dental and other services and care necessary for health* (editorial italics). These services shall include medical care by doctor of the applicant's choice, dental care and appliances by dentist of applicant's choice, optical and nursing care of applicant's choice and ambulance service; provision for medicine, drugs, medicinal and pharmaceutical supplies; artificial limbs, hearing aids and other needed appliances, without cost to the applicant. Provision is made for special supplemental diets as prescribed by applicant's doctor; such additional care and services as may be necessary to maintain or restore applicant's health."

It is provided that such care shall be in addition to any grants and not in lieu of such. It is also provided that funds shall be made available for the administration of provisions of the section as needed and in no case shall the department or any other agency apportion or allocate funds in any manner so as to obstruct or delay any applicant in receiving the care and services provided. Combined living is not to be considered as a resource and it is also provided that the department shall not establish arbitrary values or budgetary guides used to measure deductions from grants; that all applicants and recipients are to be treated alike regardless of circumstances. A number of minor changes have been introduced to clarify certain provisions of initiative 141.

If this initiative bill receives sufficient signatures, it will appear before the voters at the next state election. Undoubtedly it will receive much newspaper publicity. Since it will most intimately affect the physicians of the state, they are herewith given a preview of its contents.

MEDICAL SERVICE

A brief publication has been received, entitled *Medical Defense*, Vol. 1, No. 1, "An Interstate News Letter of Medical Activities of Defense Councils," issued by the Medical Division of the Office of Civilian Defense, Dupont Circle Building, Washington, D. C., of which George Baehr, M.D., is Chief Medical Officer. Its purpose is to disseminate information concerning medical defense, displaying how it has been established and is being maintained in dfferent states.

The Chief issues a message which says among other things: "The responsibilities of State Defense Councils parallel those of the U. S. Office of Civilian Defense and are concerned largely with measures for civilian protection in the event of belligerent action and with the preservation of public morale. Fundamentally, the preservation of public morale depends largely upon the confidence of the people in the efforts of their Government to protect their lives and their property . . .

"The hospitals, health services, and other official and voluntary agencies out of which the Emergency Medical Service is created, are at the local level, but they can only be welded together into an effective civilian defense effort by an efficient local Chief of Emergency Medical Service. To achieve a uniform level of performance in developing this important part of the local protection services in all parts of the State, a full-time executive director of the Medical Division of the State Defense Council is required to stimulate and systematically guide the localities in the organization of their Emergency Medical Service."

OFFICE OF CIVILIAN DEFENSE

Washington, D. C., January 15, 1942.

President Roosevelt has appointed Dr. George Baehr, Chief Medical Officer of the Office of Civilian Defense, to be a member of the Health and Medical Committee of the Office of Defense Health and Welfare Services. Dr. Irvin Abell, Louisville, Kentucky, chairman of the Committee on Medical Preparedness of the American Medical Association, is chairman of the Health and Medical Committee and other members are the Surgeon General of the U. S. Army, Major General James C. Magee; the Surgeon General of the U. S. Navy, Rear Admiral Ross T. McIntire; the Surgeon General of the U. S. Public Health Service, Dr. Thomas Parran, and the chairman of the Division of Medical Sciences, National Research Council, Dr. Lewis W. Weed, Baltimore. The Office of Defense Health and Welfare Services is a part of the Office for Emergency Management which in turn is part of the Executive Office of the President. The director of the ODHWS is Paul V. McNutt, who is also Federal Security Administrator.

ORIGINAL ARTICLES

TREATMENT OF THE PATIENT WITH IRRITABLE COLON*

Henry J. Tumen, M.D.
PHILADELPHIA, PA.

In discussing the problems of the patient with an irritable colon the first question to be answered is that of definition and terminology. A patient is said to have an irritable colon, when he has symptoms of colonic dysfunction for which no basis of organic colonic disease can be found. That this definition is a very loose one that has certain defects must be admitted, of course. It leaves incompletely classified those instances in which bowel symptoms result from organic or functional disturbances of other organs. The definition is a good one, nevertheless, because it emphasizes a point of the greatest practical importance, namely, that colonic symptoms can and, indeed, frequently do arise on a purely functional basis and without any underlying organic cause.

Other terms have been suggested that are equally valuable in this respect. The term "unstable colon" is a good one and the phrase "unhappy colon" is also satisfactory in calling attention to the neurogenic background that so often is present. A popularly used name is "the spastic colon" but this is a rather narrow expression, since it is applicable to only a certain group of cases. It is especially necessary to begin this discussion by emphasizing the absence of organic disease in a large number of patients who present themselves with bowel symptoms, and to decry the common application of the term "colitis" to the cases in which there is no actual inflammatory disease of the bowel.

That a full understanding of this problem is necessary for the general practitioner is best illustrated by estimates that have been made that patients with functional colonic disturbances comprise from 15 to 45 per cent of all those with gastrointestinal complaints who consult physicians, and by reports, such as one from the Mayo Clinic a few years ago, that a recognizable organic cause could be found for the diarrhea of only 15 per cent of the patients who presented themselves with that symptom.

Functional disorders of the colon can be classified under two major headings. The first includes those cases in which the disturbance is primarily motor. Since this may occur as either contraction or relaxation, it may manifest itself by either spasm or atony. The motor disturbance that occurs in association with spasm may result in either diarrhea or constipation, but atony can cause only constipation. The second type of colonic disturbance is secretory and this is particularly characterized by the discharge of excessive amounts of mucus, a symptom seen chiefly in that disturbance commonly called "mucous colitis." It is important to realize, however, that many patients have dysfunction that is both motor and secretory, these occurring in conjunction or separately and oversecretion of mucus rarely occurs without some motor dysfunction. This classification is, therefore, not an entirely sharp one for clinical application.

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*Read before the Sixty-seventh Annual Meeting of Oregon State Medical Society, Portland, Ore., Aug. 5-7, ~~1914~~. (1941?)

SYMPTOMS

The symptoms which cause patients with colonic irritability to come to the physician vary a great deal. Ordinarily, they consist of constipation or diarrhea, discharge of large amounts of mucus from the bowel and abdominal pain. Other common symptoms are abdominal distention, the vague digestive discomforts called dyspepsia, ease of fatigue and nervous and emotional instability. The more important of these symptoms should be considered in some detail.

The constipation that is seen in patients who have bowel irritability is usually a result of the severe spasm that is so often present in the sigmoid and descending colon. Such constipation is, therefore, a result of both the actual obstruction that this spasm produces and of the loss of the smoothly coordinated muscular action necessary for proper bowel emptying. In exceptional cases the motor dysfunction produces bowel atony rather than spasm and this is then the cause of the constipation, or not infrequently spasm in the sigmoid is associated with atony of the cecum. Ordinarily the constipation complained of is of fairly long standing. It is characterized by the passage of bowel movements that are usually described by the patient as being narrow and ribbonlike or broken up, frequently consisting of very small fragments or pelletlike particles.

There is often a great variation in the caliber and consistency of the stool. The patient will often give the information that during periods of comparative relaxation, such as a vacation, the movements tend to become more normal in character, to become abnormal again when nervous strain recurs. Constipation of this type frequently leads patients to the prolonged and injudicious use of cathartics, a use that may be protracted over a period of years, adding immeasurably to the irritability of the bowel.

Instead of constipation the colonic dysfunction may cause diarrhea, or not infrequently these two symptoms may alternate in their appearance. The diarrhea in these cases is likewise one that is generally present for years. Like the constipation, it tends to be worse during periods of fatigue and emotional strain. In women, menstruation is not rarely associated with increased diarrhea. When this symptom is severe, it may be almost incapacitating, the patients having a large number of movements daily. The resulting inconvenience, dehydration and mental distress are in themselves the cause of added emotional strain, so that the situation tends to perpetuate itself. The movements are often explosive and are frequently precipitated in the morning by beginning the day's activity or by ingestion of food. The stools are usually watery and nonbloody. Occasionally, they contain large quantities of clear mucus or may even be composed entirely of this secretion.

Mucus may be passed by patients who have either constipation or diarrhea. Frequently the passage of mucus is preceded by a period of severe constipation that is superseded by mucous diarrhea. The mucus passed is usually glairy and unmixed with feces. It closely resembles egg white in appearance. It may be passed in very large amounts. In exceptional cases the mucus may be passed in the form of dried or coagulated shreds that sometimes are large enough to amount to casts of the bowel. Not rarely the patient mistakes these shreds for worms. As I have already stated, passage of mucus without some evidence of motor dysfunction of the colon is quite rare.

Pain complained of by the patient with an irritable colon varies a great deal. It is commonly cramplike in character and may then occur in violent paroxysms or it may be a dull, constant ache, or the patient may describe this discomfort as a feeling of "gas." The pain is usually felt below the umbilicus and the left lower quadrant is the most common location. Any abdominal area, however, may be the site and, since the patient may complain of discomfort in the region of either colonic flexure or of the ileocecal valve, serious organic intraabdominal disease may be closely imitated. This not infrequently may lead to to an incorrect diagnosis of appendicitis or gallbladder disease. It is characteristic of the pain produced by an irritable colon, however, that its occurrence is definitely associated with bowel action and questioning can usually elicit the fact that pain either closely follows or is relieved by bowel movement or passage of gas. Such an association of pain and bowel movement is a most important diagnostic clue. There is also absence of constitutional reactions such as fever and leukocytosis generally encountered in the other conditions.

It must be emphasized that all the symptoms of an irritable colon vary a great deal and at different times the same patient may manifest any or all types of secretory or motor bowel dysfunction. This variability of symptoms is also of diagnostic significance.

The physical examination of these patients may be essentially negative except for palpation of the descending and pelvic colon. This is frequently found to be a tender and stiff narrow tubular mass in the left lower abdomen.

Many patients with irritable colon also have the type of abdominal neuralgia described by Carnett. This is suggested in the history by a story of an underlying, constant, unvarying pain of long duration, independent of the discomfort connected with bowel movements and by the finding on examination of tenderness that is distinctly localized to the superficial tissues. Such tenderness can be elicited by palpation over abdominal wall muscles purposely made tense. Recognition of this type of tenderness is important because it helps to exclude intraabdominal organic disease as the cause of symptoms.

DIAGNOSIS

Sigmoidoscopic examination is an extremely important diagnostic procedure that must be included in the investigation of all patients with symptoms suggesting an irritable colon. It is the chief means of excluding the presence of organic disease such as inflammation or neoplasm in the lowermost portion of the bowel. Sigmoidoscopy in patients with irritable colon frequently reveals mucosal changes such as vascular engorgement and a granular appearance of varying degree. It also serves to demonstrate visually spasm of the sigmoid that is present so frequently, and may be of additional diagnostic aid in that passage of the instrument into the spastic sigmoid often reproduces the pain of which the patient complains. In many patients the mucus so characteristic of secretory colon disturbance can also be seen. This is clear, resembling egg white, and can be removed from the bowel wall easily and without trauma. When examined under the microscope it is found to contain practically no cells.

In addition to the routine laboratory studies, the patient presenting himself with symptoms suggesting an irritable colon should have a gastric analysis, a careful stool examination and roentgenogram of his colon. The gastric analysis is necessary to exclude achlorhydria as a cause of diarrhea. Diarrhea is a complication of achlorhydria in only a small percentage of cases with deficient gastric secretion. It is suggested as a diagnostic possibility by the occurrence of painless diarrhea on arising in the morning and after the ingestion of food, and by the absence of the other symptoms associated with bowel irritability. This type of diarrhea is so easy to relieve by the administration of hydrochloric acid that it is an important practical point not to overlook its presence.

Stool examination is, of course, an absolutely necessary method of study which must not be omitted in the study of these cases. The characteristic narrow or frequently scybalous stool of the irritable colon that produces constipation has already been mentioned and the type of mucus described. In the presence of diarrhea the stool is mushy or liquid. It may contain undigested foods, particularly fruit or vegetable remains, as a result of hurried passage through the intestine. The constant absence of blood is of great significance in excluding organic disease, and it is absolutely necessary to search for parasites in order to exclude this commonly overlooked source of trouble.

Investigation of these patients must be completed by competent roentgen study and for this a barium enema usually suffices. This serves to exclude organic disease such as neoplasm or diverticulitis, and the ability to reassure the patient on this has additional therapeutic value. It is also a means of properly evaluating the motor disturbance of the colon which exists. Ordinarily the irritable colon shows the effects of spasm, and distinct narrowing of a greater or lesser area of the bowel is encountered. This is usually most marked in the descending colon and sigmoid and may be confined to that region. The haustral markings may be exaggerated or grossly irregular. Occasionally the haustra are entirely wiped out and the roentgen appearance of the bowel then closely resembles that of ulcerative colitis. What serves to stamp the defect as functional, however, is the absence of shortening, and variability of the bowel from study to study.

In differential diagnosis of the irritable colon it is first of all necessary to exclude organic disease of the colon itself, notably neoplasm, inflammatory diseases such as ulcerative colitis and the various infections and parasitic disorders that attack the bowel. A functional disturbance is suggested by a long history of constipation or diarrhea associated with abdominal pain, the symptoms tending to be aggravated by emotional upsets and fatigue. The constant absence of blood from the stools and negative findings after careful roentgen and sigmoidoscopic studies serve to rule out the presence of the above-mentioned pathologic processes.

I wish to emphasize my belief that detailed objective studies must be done in all cases, no matter how strongly the history suggests a functional cause for the patient's symptoms. A patient with an irritable colon may develop a carcinoma as readily as the average and the association of amebiasis and irritable bowel is by no means unknown. It must also be realized that functional bowel disorders may very occasionally form the basis for the eventual development of such a severe organic disease as ulcerative colitis. Complete diagnostic studies are necessary, not only so that proper treatment may be planned but also because of the therapeutic value of being able to reassure the patient on the absence of organic disease.

In addition to actual gross colonic diseases, it is also necessary to exclude extracolonic disorders that may influence bowel function. Deficient gastric secretion has been mentioned. Pancreatic deficiency is another possible cause of diarrhea, characteristically productive of bulky, fatty stools. It is also advisable to consider carefully such possibilities as appendicitis, renal or pelvic disease, which may cause bowel disorder through reflex action.

I have frequently been impressed by the reluctance with which physicians make the diagnosis of a colonic disturbance of functional origin, by the extremely high diagnostic threshold which keeps recognition of the nonorganic nature of the patient's illness from the doctor's mind. This impression is substantiated by reports such as a recent one which stated the initial diagnosis of the attending physician had been incorrect in 63 per cent of the cases of "mucous colitis" observed. A very large number of the instances in which so-called chronic appendices are removed, without this operation affording relief of symptoms, are examples of such errors.

Recently, I reviewed a large series of cases in which an incorrect diagnosis of chronic gallbladder disease had been made. In more than half of these the actual cause of the symptom was an irritable colon. The incorrect diagnosis made in patients with functional bowel disorders include these common errors and many rarer ones such as renal colic, ovarian disease and many others. The diagnostic problems of the irritable colon present a double responsibility to the doctor. He must not permit serious organic disease of the bowel to go unrecognized. At the same time he must be fully cognizant of the possible manifestations of a functional disorder and be prepared to direct treatment toward its correction.

PATHOGENESIS

The problems of the treatment of the irritable colon are so intimately connected with those of etiology and pathogenesis that it is impossible to discuss therapy without carefully considering first the mechanisms that produce this disorder. First and foremost in such a consideration is the emotional factor. There can be no doubt that emotional instability, fatigue and anxiety are prominently noted in a survey of the personalities of patients who come to the physician with symptoms of irritable colon. The disorder is much more common in members of those races considered to be emotional. It is probably more commonly encountered in the so-called upper classes and in those whose work is more a matter of intelligence than of muscle, and it would seem that in times of depression and upset the condition becomes more prevalent. The irritable colon is probably more frequently encountered in urban than in rural practice. It is certainly true that in the individual patient bouts of pain and diarrhea can be traced frequently to specific emotional upsets, to the nervous strain of business or family worry, to difficulties of "finance or romance." What may not be so obvious is that the personality background productive of this disorder may be dependent on old psychic trauma or deep-seated conflicts that only the most careful psychiatric investigation may reveal.

The mechanism by which emotional factors produce bowel irritability is not entirely clear. It must be recalled that the gastrointestinal tract is richly innervated by the two antagonistic divisions of the vegetative nervous system, the parasympathetics which are the activators and stimulate secretion and contraction, and the sympathetics which are the inhibitors of bowel activity. Proper bowel function depends upon a carefully maintained equilibrium between these components of the autonomic nervous system. It is entirely possible that severe and protracted emotional upsets may destroy this equilibrium through action on the sympathetic and parasympathetic centers. It has been shown that many patients with irritable colons do have evidence of vegetative nervous system imbalance, generally with parasympathetic preponderance. Jones and his associates noted the ease with which the mucosal changes seen on sigmoidoscopic examination in patients with irritable colon could be reproduced by administration of such parasympathomimetic drugs as pilocarpine, physostigmine and acetyl-B-choline. In any case, and whatever the mechanism, clinical experience emphasizes the important part that emotional factors play in causing the condition under discussion.

Students of the psychosomatic manifestations of illness have long emphasized colonic disturbances as frequent indications of a neurosis. In recent study White, Cobb and Jones concluded that mucous colitis results from parasympathetic overstimulation. In 92 per cent of their patients this was brought about by emotional tension. The Chicago Institute for Psychoanalysis reported that overconscientiousness, dependence, sensitivity, anxiety, guilt and resentment were the emotional tensions most commonly found in patients with mucous colitis.

Other factors, however, may also be of great importance in individual cases. In a few patients allergy, usually to foods, is a causative agent. This is suggested by a family history of allergy, occurrence in the patient of other disturbances more generally considered to be allergic, such as hay fever or asthma, occurrence of attacks after the ingestion of specific foods and association of nausea and vomiting with the colon symptoms. Such facts in the history justify the inclusion of allergic studies as an additional diagnostic approach. Interpretation of the results obtained from skin tests must, however, be made with caution, since the patient may be sensitive to the protein products of incomplete indigestion rather than to the original foodstuff itself, or may have skin sensitivity to foods that do not cause gastrointestinal symptoms. In case of doubt, it is wise to follow the skin tests with the use of test diets based upon a detailed dietary history, and give these diets careful clinical trial before concluding that the allergic factors are of prime importance.

The exact role of endocrine disturbances is difficult to determine, although it may be a significant one in many cases. The association of symptom increase with menstruation may or may not be of endocrine origin. The different endocrinopathies occur with varying frequency in patients with colonic dysfunction. Colon irritability, as indicated by diarrhea, may be a symptom of hyperthyroidism and this diagnostic possibility must be kept in mind. I have frequently seen patients with the obesity of pituitary dysfunction who had marked lower bowel disturbance. The association may be coincidental or may result through autonomicnervous system imbalance but this phase of the subject is worthy of careful study.

There is one other etiologic factor of the greatest importance which remains for consideration and that is the influence of injudicious treatment. A very high percentage of the general public is bowel conscious, too fearful of the possible effects of a day or two of constipation. This is the result of older ideas which stressed the dire consequences of absorption of so-called toxic substances from the bowel. Although much research has failed to demonstrate the absorption of any toxin from the colon, drastic cathartics and concentrated forms of cellulose are yet widely taken with unnecessary frequency and profusion. The medical profession is not entirely innocent of contributing to this state of affairs. In patients, whose constipation was originally due to spasm, such maltreatment of the colon produces superimposed catharrhal changes and may be an important cause of the intensification and prolongation of the original dysfunction. Constant self-treatment is often a manifestation of colon consciousness that has deep seated psychic causes and, by producing additional bowel symptoms, serves to create a vicious circle that requires great therapeutic skill to break.

TREATMENT

This presentation of some of the causes of bowel irritability serves to introduce the final portion of this discussion, the question of treatment. The therapy of the patient with an irritable colon must be broad enough to include consideration of all possible causative factors that have already been mentioned. The colonic disturbances are only symptoms and treatment directed simply against these symptoms and not toward removing their cause is usually doomed to failure, as is true of most symptomatic treatment. In most patients a great deal of attention must be devoted to management of the psychic and emotional factors. Adequate treatment of these often necessitates a satisfactory personality survey, one that usually can be obtained only by a number of hours of interview that permits the patient to discuss his problems freely. It is certainly not satisfactory to the patient to be told bluntly and without further qualification that his bowel symptoms arise from nervousness. He must be made to understand the mechanism by which they arise and be taught to understand their significance. He must realize that organic disease is not present. The physician must enlighten the patient upon the functional character of his illness, explain the full meaning of this concept and enlist his full cooperation in seeking the factors which have made him ill.

Of great therapeutic value is the patient's ability to discuss his difficulties freely with someone who has no personal interest in their solution. The physician can do inestimable good by gradually educating the patient to solve his problems and to adjust himself to situations that cannot be changed. In an occasional case, the colonic symptoms are the somatic manifestations of a deep-seated psychic problem. In such instances the assistance of a trained psychiatrist may be needed.

Even if the physician lacks the training which would equip him to delve deeply into the emotional problems of the patient, there are many general therapeutic procedures that are of obvious value. Such measures as adequate rest, properly spaced vacations, avoidance of excessive nervous and physical strain and correction or removal of conditions which bring them about, and reduction of anxiety are of great importance and must not be overlooked. The patient must be taught to eat, sleep and exercise regularly; he must be made to understand that his need for such care does not brand him as an invalid and that he need have no shame because he heeds such prophylactic advice. If the general survey has revealed endocrine and allergic factors that may have etiologic significance, they should be treated, of course, although it must be admitted that our present endocrine knowledge is not sufficiently developed to permit satisfactory treatment of many of the functional states we see.

Of the utmost importance is the breaking down of the excessive bowel consciousness that so many of these patients have. Although some would blame this also on an underlying psychic cause, I believe it is usually a result of misinformation and miseducation acquired during early life. Constant emphasis on the necessity for a daily bowel movement often leads to needless purgation and subsequent bowel irritation. A short time spent with the patient in an explanation of the physiology of the colon, so that he understands it to be a hollow tube designed to empty itself under the natural stimulus of slight overdistention and not after the urge of a drastic cathartic, is time spent to the greatest advantage. Such educational efforts will be amply repaid and represent a finer type of medical skill than the ability to prescribe another laxative.

Dietary management of these patients need not be very complicated. It is important to advise against the use of foods high in cellulose content or containing excessive spices or condiments, and to advise the avoidance of ice cold foods. For this reason raw fruits and vegetables such as corn, cabbage, celery should not be taken. Otherwise the patient may eat what would be described as a well balanced diet with avoidance of any articles to which he knows himself to be definitely sensitive. An adequate fluid intake should also be ordered. Usually it is best to prescribe a diet list comprising milk, eggs, bread, butter, cooked cereals, well cooked meats, strained vegetables, cooked fruits, simple puddings and fruit juices. Frequently the problem is to get the patient to eat more rather than less food. All too often years of ascribing discomfort to various foods in turn has led to dietary restriction of the utmost severity so that the patient ends by getting a definitely deficient diet.

He must then be encouraged to eat a diet adequate in protein and vitamins, divided into regularly spaced meals. The subsequent improvement in general health which is brought about by such a diet is naturally of the utmost value. At the present time vitamin therapy is receiving tremendous overemphasis. While it may be true that many people suffer with subclinical avitaminosis, there is still no proof that this has much bearing on the irritable colon. Additional vitamins do no harm but other than the possible benefit that may result from the administration of B_1 to patients with atonic colons, it cannot be stated definitely that they are of value in the type of case under discussion.

For patients who are underweight the caloric intake may be increased by addition of lactose to milk and fruit juices. This sugar is also of value in those patients whose stool and urine examinations show evidence of much putrefaction in the bowel. It can be given in amounts that total three to four ounces per day. Occasionally, the first use of this sugar is associated with a great deal of flatulence but ordinarily this subsides if the lactose is continued. It is probable that the beneficial effect of lactose on the bowel is due to the stimulation of the growth of acidophilic organisms. As a matter of fact, most critical work seems to indicate that this can be accomplished by the administration of lactose and a low protein diet and that it is not necessary to give acidophilus milk for this purpose. A review of most of the reports on acidophilus milk has convinced me that its use is not necessary or valuable in the average case of chronic constipation or other functional bowel disturbance.

The most valuable drugs for general treatment of the irritable colon are the mild sedatives and antispasmodics. Small doses of phenobarbital do much to allay anxiety and mental strain and to produce adequate relaxation. This, or small doses of bromides, should be used as needed and it is advisable to prescribe what hypnotics are necessary to produce sufficient sleep. Belladonna or atropine are also widely used, and with great benefit. It is best to use belladonna as the tincture and to order it taken in gradually increasing doses until physiologic effect is obtained. Since many of these patients have parasympathetic preponderance, very large doses of belladonna may be necessary to produce the desired effect. If belladonna fails to produce bowel relaxation without toxic side reactions, the synthetic antispasmotics such as "trasentin" or "novatropine" may be tried, although these are usually less valuable than the natural drug. Over a period of years calcium, occasionally combined with parathyroid extract, has been advised for its sedative action on the parasympathetics. Its effect, however, is still questionable.

When constipation is present, it should be treated by immediate cessation of the use of all strong laxatives, irrigations and enemas, and following a program which will include regularity of meal hours, ingestion of ample fluids. There must be a conscientious attempt to establish regular bowel habits by taking sufficient time to go to the toilet at the same time daily, preferably shortly after breakfast, in order to take advantage of the fact that the gastrocolic reflex is ordinarily strongest at that time. These simple measures will suffice in a very large number of cases, if the patient can be impressed with their importance. If they do not serve to restore bowel function, they may be supplemented by administration of mineral oil or one of the other bland, nonirritating bulk producers such as agar or a psyllium seed preparation. Oil is particularly valuable for those whose stools are hard and dry. Its dosage is easy to regulate and it should always be given the trial of regular adequte administration. It seems most apt to fail when there is extremely severe sigmoid spasm. Psyllium seed preparations such as mucilose, metamucil or konsyl have the advantage of absorbing enough moisture to create a stool that is bulky without being irritating. Their dosage can generally be reduced as normal habits are restored until none is taken. Care must be exercised to avoid prescribing preparations of these substances that contain laxatives such as cascara, since such combinations defeat the purpose of the physician. If constipation is very pronounced, small doses of magnesium oxide may be used in combination with belladonna and phenobarbital. It is unusual to encounter a case in which persistent and conscientious use of these conservative measures fails to relieve constipation.

The diarrhea suffered by these patients also tends to be relieved by the general measures outlined above: rest, avoidance of roughage, regularity of meals, reduction of nervous strain and use of sedatives and antispasmodics. It has always seemed to me that diarrhea as a symptom is more frequently dependent on acute emotional problems than is constipation. Such problems should be most carefully sought for and corrected if possible. When diarrhea is marked and much fluid is being lost, substances which absorb a good bit of the bowel fluid are of value. The most suitable of these is kaolin. It may be used in one or two dram doses four times daily. Combinations of kaolin with equal parts of calcium lactate or gluconate are also useful. The barium sulphate used for roentgenogram is also of value for this purpose. Recently introduced preparations of aluminum hydroxide may also be prescribed. These inert bulky substances may owe some of their beneficial effect to absorption of bacterial or putrefactive products.

The whole question of bowel "detoxification" seems to rest on extremely flimsy data. If the patient has symptoms such as headaches, bad breath, extreme fatigue, which suggest the picture which was formerly held to arise from a "toxic" state, small doses of sodium ricinoleate may be prescribed, although I must confess that I have often been in doubt as to their value.

Patients occasionally suffer attacks of pain acute and severe enough to require immediate measures for relief. Such attacks may be associated with either constipation or diarrhea or with discharge of a great deal of mucus. When these severe attacks occur, it is best to enforce strict bed rest. Atropine and sedatives of the barbital group should be used freely. It is better to avoid opiates but occasionally small doses of codeine are necessary. Heat to the abdomen in the form of an electric pad or hot compresses is of benefit or a hot bath may be ordered. If there is constipation with these attacks, instillation of a few ounces of olive oil or cotton seed oil into the rectum may help. Occasionally calcium and parathyroid relieve the acute attacks.

In closing, I wish to reemphasize some of the statements made during this discussion. The patient with an irritable colon suffers with effects of bowel dysfunction rather than with actual organic colonic disease. Like all functional disorders, the problem here is a general one and, therefore, may be difficult to solve. Doctors, however, must accept the challenge presented by the large numbers of patients with irritable colon and develop a suitable therapeutic technic that will bring about cure rather than mere palliation. If the physician and the patient focus their attention too closely on the colon, treatment may easily fail. It is necessary to treat the entire individual rather than his bowel alone. The patient's physical and nervous make-up, his social environment, his habits and family background all contribute to the development of his disorder. For therapy to be successful, the doctor's viewpoint of this problem must be broad enough to embrace all of these phases in his plans for treatment.

DIAGNOSIS AND TREATMENT OF INTESTINAL OBSTRUCTION*

WITH SPECIAL REFERENCE TO MILLER-ABBOTT TUBE

David Metheny, M.D.
and
Homer V. Hartzell, M.D.
SEATTLE, WASH.

Forty years ago the mortality rate for intestinal obstruction was sixty-six per cent. Fifteen years ago, when the value of fluids and chlorides came to be known, the mortality rate was cut to approximately thirty per cent, but only in the hands of men who were most expert in treating this condition. In the past year there have been two large series of cases reported with a mortality rate of approximately ten per cent. This comparatively excellent rate has been achieved largely through the use of the Miller-Abbott tube.[1, 2, 3]

All cases that die with intestinal obstructions die with massive distention. Distention causes a vicious cycle. It first increases capillary permeability and produces edema of the bowel wall. It stimulates massive secretion of intestinal juices within the intestine. This further increases the distention to such an extent that blood supply is interfered with and gangrene results.

There is a second vicious cycle. Vomiting as well as loss of fluids into the lumen of the bowel wall and into the bowel wall itself produces dehydration and hemoconcentration. The loss of fluid decreases oxygen being carried to the tissues which, along with reduction in vital capacity, causes more edema of the obstructed bowel and more fluid to be thrown into the bowel lumen. This increases distention, perpetuating a vicious cycle until dehydration is so marked that shock intervenes with a failure of the medullary centers. Thus we see that distention per se produces two interrelated vicious cycles, one of which leads to gangrene of the bowel wall, peritonitis and death. The other leads to dehydration, shock and death.

The purpose of the Miller-Abbott tube is primarily to relieve distention. It does this by moving down to the point of obstruction and breaking up the vicious cycle which distention causes. When it is possible to get rid of distention, operation is easier and sometimes even unnecessary. Hence the treatment of intestinal obstruction primarily demands the treatment of distention.

The three main types of intestinal obstruction are: (1) obstruction of the large bowel; (2) strangulated obstruction of the small bowel; and (3) most frequently occurring, nonstrangulated obstruction of the small bowel. Although use of the Miller-Abbott tube is not indicated in the first two types of obstruction, it is frequently a life saving procedure in cases of nonstrangulated obstructions of the small bowel. A careful determination of the type of obstruction will show those cases in which the Miller-Abbott tube will be effective.

The clinical picture of obstruction of the large bowel is quite distinct. The distention is out of proportion to the vomiting. Vomiting in many cases is not present. Most of these cases are associated with carcinoma or diverticulitis. The previous history is helpful. These are generally slower in development. The obstructed colon will frequently hold but a pint of water or less on administration of an enema. Repeated enemas will often relieve the obstruction which, however, may be only one of a series of attacks. The passage of blood as in intussusception in children may be pathognomonic.

Roentgen examination is particularly useful as an aid in diagnosing large bowel obstruction. This type of obstruction usually gives quite typical signs on supine or prone films (fig. 1). In large bowel

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*Read before the Fifty-second Annual Meeting of Washington State Medical Association, Seattle, Wash., Aug. 24-27, 1941.

1. Abbott, W. O.: Treatment of Intestinal Obstruction with the Double-Barreled Intestinal Tube. M. Soc. New Jersey, 37:108-111, March, 1940.
2. Duncan, J. A.,: Miller-Abbott Intestinal Intubation. Northwest Med., 39:177-179, May, 1940.
3. Cogswell, A. D. and Thomas, C. A.: Use of Miller-Abbott Tube. Southwestern Med., 24:10-14, Jan., 1940.

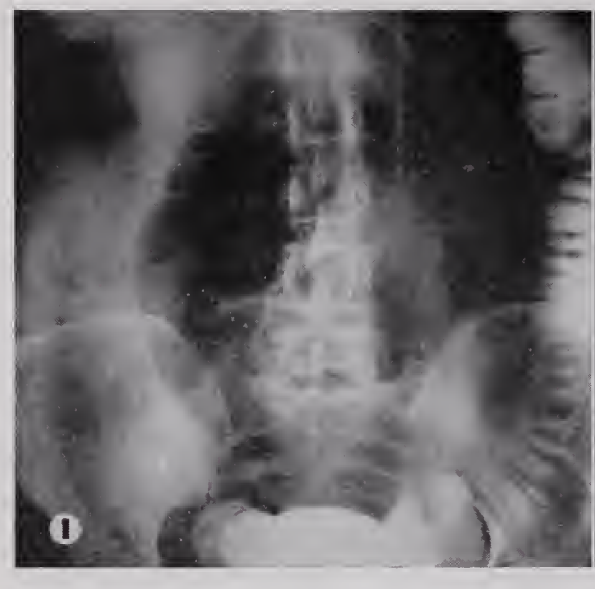


Fig. 1. Case of obstruction low in colon. Note gas in colon only. The lumen is large and distended loops assume a vertical pattern. Barium per rectum helps to localize lesion.

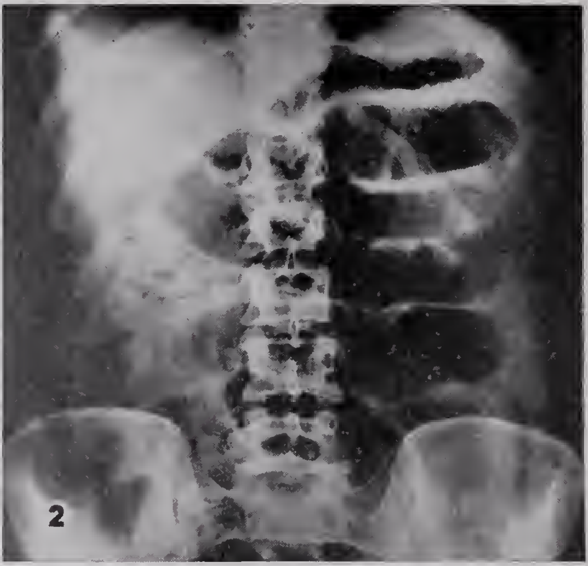


Fig. 2. Case of mechanical obstruction of small bowel. Note distention is localized to small bowel. Loops of bowel are horizontal.

obstructions the dilated loops are seen to be arranged in a more or less vertical pattern. The dilated bowel is close to the lateral margins of the abdomen. Haustral markings usually show irregularity of the margins and no straight line edge. The fluid levels, if present, are large. Especially is diagnosis made more certain, if the prone or supine film is followed by a barium enema under fluoroscopy. We are of the opinion that in many instances the barium enema may be a life saving diagnostic procedure.

The initial surgical procedure that gives the best result in these cases is a small blind cecostomy through a muscle splitting incision. After distention has been relieved and fluid balance returned to normal, the main cause of intestinal obstruction can be treated with comparative safety.

The second contraindication to use of the Miller-Abbott tube is strangulated obstruction of the small bowel. This demands surgery as soon as the patient can be brought out of shock, should that be present. This is the type of case in which the blood supply has been interfered with.

Signs and symptoms: (1) silent abdomen (always), (2) localized tenderness, (3) leukocytosis, (4) fever, (5) recurrent cramp-like pain (persistent), (6) palpable mass, (7) shock, (8) blood in the stool, (9) roentgenographic distention localized to the small bowel (fig. 2).

We consider a silent abdomen to be the most important sign. This is also present in ileus from peritonitis. In this case the gas is not only in the small bowel but also the large (fig. 3). Conversely, a mechanical obstruction of the small bowel without strangulation will have gas limited proximally to the obstruction but the abdomen will not be silent.

The many varieties of small bowel obstruction may be classified in two large causative groups: (a) indirect and (b) direct.

The indirect cause is reflex or so-called adynamic ileus. This group includes intestinal stasis resulting from peritonitis, shock, toxemia, severe pain as from kidney stones or, in short, any factors causing unusual and severe stimulation of the sympathetic system. Diagnosis can be made by a close correlation of the clinical, laboratory and roentgen

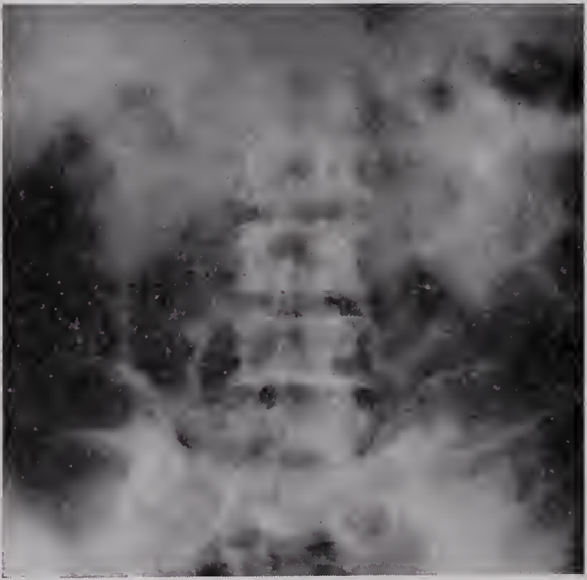
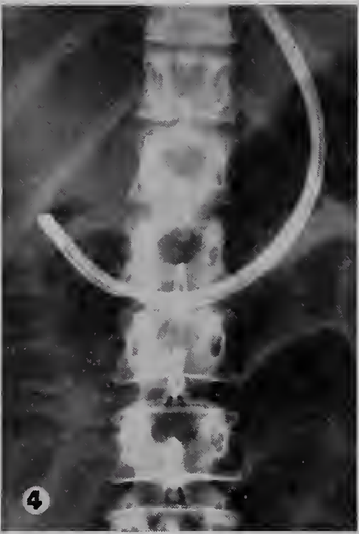


Fig. 3. Case of paralytic ileus. Note distention of both large and small bowel.

examinations.[4, 5, 6] Clinically, the patient has pain, vomiting and abdominal distention. The abdomen is relatively quiet. The patient may recently have received a shock to the sympathetic nervous system from peritonitis, operation, incomplete passage of kidney or gallbladder stones or trauma. There may be a leukocytosis. Serum protein may be low. The roentgonegram reveals distention of both large and small bowel. There are no localized distended loops. Later there may be evidence of considerable edema and thickening of the bowel wall with free peritoneal fluid.

The direct or mechanical type of nonstrangulated obstruction (so-called dynamic ileus) includes stoppage of the intestine by bands or adhesions, obturation of foreign bodies, internal pseudohernias or partial true hernias. The cardinal symptom is peristaltic pain associated with borborygmus. The other signs and symptoms of this type tend to mimic those of strangulated small bowel obstruction but are never sharply defined or well marked as in strangulation cases. It is in nonstrangulated obstructions of the small bowel that the Miller-Abbott tube is such a life-saving procedure.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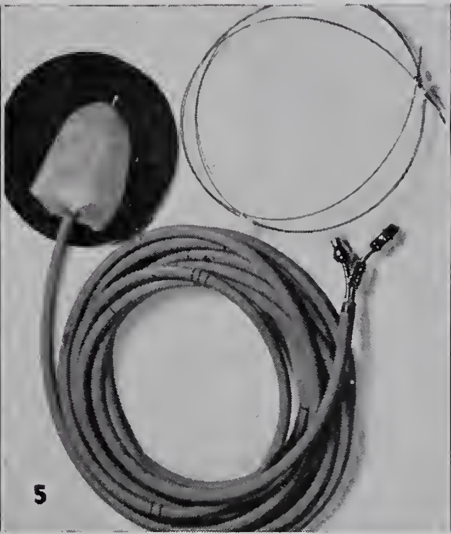
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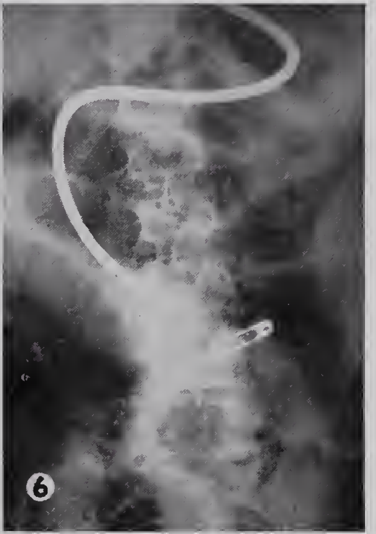
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Fig. 4. Position of tube as it should lie in stomach before passage into duodenum.

Fig. 5. Miller-Abbott tube with balloon partially inflated. The piano wire is shown.

Fig. 6. Position of tip of tube in duodenum between second and third portions. The bulb may now safely be inflated.

An objection that is often raised against the use of the Miller-Abbott tube is the inability of those unfamiliar with it to get the tube down. However, it requires only a little patient and easily acquired technic before passage of the tube is readily accomplished. The technic of passing the Miller-Abbott tube is well and completely described by Leigh, Nelson and Swanson.[7] Briefly, it consists in passing the well lubricated tube into the stomach so that the tip lies in the antrum and there is an adequate loop along the greater curvature (fig. 4). If a light piano wire (fig. 5) is placed in the tube (to within six to eight inches of the tip) the tip can sometimes be immediately placed under fluoroscopy in the second portion of the duodenum, at which time the balloon should be inflated (fig. 6). The piano wire (or steel fishing leader No. 018) is run through the suction side of the tube, being inserted first through one of the suction holes and then out through the sides of the tube 110 cm. from the tip.

Of course, it is necessary to remove the wire after the second portion of the duodenum has been reached. We have learned it to be necessary to reenforce the tube at the site where the wire has been withdrawn by a piece of adhesive tape. Otherwise, the tube is likely to be split at that point. We have also found it occasionally advantageous to insert about 5 cc. of mineral oil through the tube after the antrum has been reached to lubricate and facilitate passage through the pylorus. If this is not possible, the tip should be left in the antrum for a few hours after deflation of the stomach, while gastric lavage and continuous suction are applied. With the patient on the right side fluids are freely given and suction applied continuously. The tube is al-

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[4] Wigby, P. E. and Cochran, W. H.: Roentgenogram in Intestinal Obstruction. Texas State J. M., 34:740-745, March, 1939.

[5] Chamberlain, W. E.: Roentgenological Aids in Diagnosis and Management of Intestinal Obstruction. S. Clin. North America, 18:1621-1632, Dec., 1938.

[6] Pendergrass, E. P.: Role of Radiologist in Diagnosis of Chronic Obstructive Lesions of Small Intestine. Internat. Clinics, 1:133-141, March, 1940.

[7] Leigh, O. C., Jr., Nelson, J. A. and Swenson, P. C.: Miller-Abbott Tube as Adjunct to Surgery of Small Intestinal Obstructions. Ann. Surg., 111:186-213, Feb., 1940.

most invariably carried into the duodenum within two to twenty-four hours.

We have found that the fluoroscope is of considerable aid in ascertaining the position and progress of the tube. However, it can often quite readily be passed without it. The chief concern in passage of the tube is to determine when the tip has reached the junction of the second and third portions of the duodenum so that the balloon may be inflated with 20-30 cc. of air. After this has occurred, passage of the tube is almost automatic. Assurance that the tube is in the duodenum can be checked, (1) by evidence of change from lighter gastric secretion to yellow bile stained secretion, and (2) by observing the rhythmic resistance to 20 cc. of air, if it is in the duodenum.

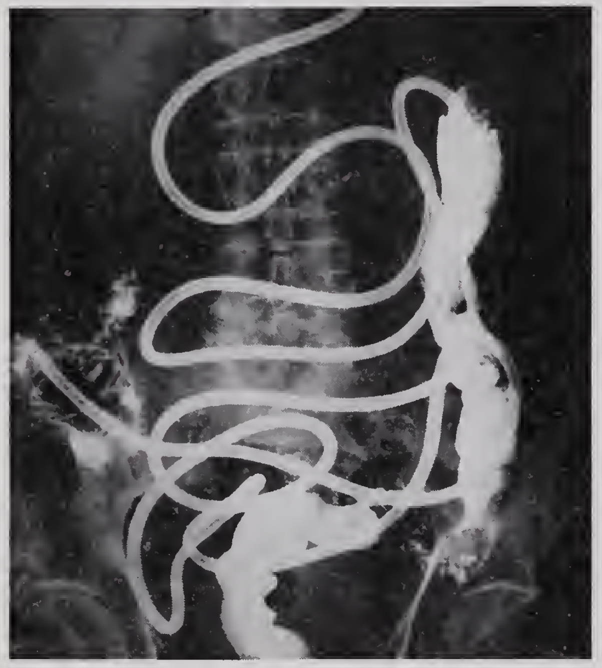

Fig. 7. Tube well down. Tip has passed into cecum. This was a case of appendiceal abscess.

After the tube is in the small bowel, the patient is allowed a liquid diet for the first day and a low residue diet thereafter. Approximately two-thirds oral intake is returned with the tube in the jejunum, one-third in the distal ileum. When the obstruction is reached, the bulb should be deflated and position of the tube checked by fluoroscopy. Fifty to one hundred cubic centimeters of barium suspension is injected under fluoroscopic control[8] (fig. 7). We have kept the tube in place for two weeks preoperatively. During this time the patient was comfortable, the abdomen flat, nutrition and fluid balance improved so that the patient easily withstood major surgery.

The tube should not be removed until after operation or the obstruction is relieved. In cases with mechanical obstruction, even in the terminal ileum, the balloon may be passed to the point of obstruction within twenty-four to thirty-six hours, but in those cases with a paralytic ileus three to five days may be required to reach the cecum.

SUMMARY

In obstruction of the colon distention must be relieved by enema or surgery. In strangulated obstructions of the small bowel immediate surgery is required to prevent peritonitis. In nonstrangulated obstructions of the small bowel the Miller-Abbott tube is most useful. By relieving the distention it either altogether eliminates the necessity for surgery or renders operation much less difficult.

AMEBIASIS IN YAKIMA VALLEY*

Paul J. Lewis, M.D.
and
Joseph H. Low, M.D.
YAKIMA, WASH.

The outbreak of amebic dysentery in epidemic form at the celebration of the Century of Progress in Chicago in 1933, with the resultant widespread publicity, served to make physicians in the United States more alertly conscious of the disease and also showed that amebiasis is not alone a disease of the tropics but occurs in temperate climates as well; in fact, it is a world-wide disease. The first case of amebic dysentery was reported in St. Petersburg by Loesh in 1875.

It is our purpose in this paper to present our observations in a clinical study of patients in and about the Yakima Valley with positive stool examinations harboring one or more of the human intestinal amebae. These patients represent the type of case from which bizarre complaints made it necessary that the stool be examined before a diagnosis could be made. This study extends over approximately a five-year period.

The incidence of infections has been studied in many localities by means of surveys and shows considerable variance, probably because of the different methods employed. It also may be due to the fact that not enough stools were examined in individual cases. Brown[1] states: "In examination of a group of patients a single specimen from each, following administration of magnesium sulphate, will reveal 80 per cent of infestations; that two stools from each patient will yield more than 95 per cent of infestations and that three stools will yield approximately all infestations."

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[8] Lofstrom, J. F. and Noer, R. J.: Use of Intestinal Intubation in Localization of Lesions of the Gastro-Intestinal Tract. Am. Journal Roent. & Rad. Th., 1939, 42-3, 321-331.

*Read before the Semiannual Meeting of North Pacific Society of Internal Medicine, Victoria, B. C., Aug. 29-30, 1941.

[1] Brown, P. W. and Magath, T. B.: Amebiasis; Diagnosis, Prevention and Treatment.

The microscopic examination alone of both wet and stained smears was the only diagnostic procedure performed in our series. Obviously, concentration and flocculation methods, cultural methods and the complement fixation test would have added a larger number to our series. However, using only the microscopic examination of wet and stained smears, it was found that of five hundred eighty-six stools examined one hundred twenty-six contained amebae, an incidence of 21.50 per cent. Our incidence is considerably higher than reported by most surveys (fig. 1).

Year	*Stools Examined*	*Positive*	*Percentage*
1937	86	18	20.93
1938	95	18	20.00
1939	114	21	18.42
1940	135	29	21.48
1941 to August 15	156	39	25.00
	586	126	21.50

Fig. 1. Survey of Incidence in Yakima Valley.

In the year 1937, examination of eighty-six stools yielded eighteen positive for amebae, an incidence of 20.93 per cent. In 1938, ninety-five stools examined showed nineteen positives, an incidence of 20 per cent. In 1939, one hundred fourteen stools yielded twenty-one positives, an incidence of 18.42 per cent. In 1940, one hundred thirty-five stools showed amebae in twenty-nine cases, an incidence of 21.48 per cent; and in 1941 up to August 15, amebae were found in thirty-nine of one hundred fifty-six specimens examined, an incidence of 25 per cent. It will be noted that the percentage of incidence is approximately the same for the years 1937, 1938, 1939 and 1940. We attribute an increase of incidence percentage in 1941 to the fact that we examined the stools of more patients with bizarre gastrointestinal complaints than we had in the past.

We feel that the explanation for the high incidence of amebiasis in and about the Yakima Valley is possibly due to the following reasons:

1. The water supply of the City of Yakima is purified by the chlorination sedimentation method which is known to be ineffective against amebic cystic contamination.

2. In rural Yakima the water supply is to a large extent derived from cisterns which are filled at intervals with irrigation water. Others derive their water supply from shallow wells which are commonly contaminated by irrigation water.

3. There is an unusually large number of Orientals inhabiting the Yakima Valley. It is known that amebiasis has a notoriously high incidence among these people, particularly in "carrier" form. Our survey shows that amebiasis is no respecter of social strata, the infection being equally as common among the well-to-do as among the poor.

No attempt was made in this series to trace the sources of the infections because it is only in an epidemic such as the one that occurred in Chicago in 1933 that these sources may be satisfactorily traced.

Surveys have shown that protozoa are the most prevalent of human parasites. It is estimated that 30,000,000 people in the United States are infected with one or more of the five distinct species belonging to the order of Amoebae parasitic to man. They are:

	Per cent
Endamoeba histolytica	2.5-10
Endamoeba coli	15 -31
Endolimax nana	10 -37.7
Iodamoeba buetschlii	2 - 3.5
Diendamoeba fragilis	2 - 4

It has been the generally accepted old idea that only Endamoeba histolytica is pathogenic to human beings, and the other four forms of intestinal amebae are nonpathogenic. However, many men (Lynch[2] in 1930; Brown[3] in 1926; Rankin, Bargen and Buie[4] in 1934; Rothman and Epstein[5] in 1941) have concluded from their clinical studies that Endamoeba coli and Endolimax nana are pathogenic, when found in patients with gastrointestinal symptoms. This also has been our observation and conclusion.

Hood[6] states: "Diendamoeba fragilis is capable of producing symptoms which strongly suggest its pathogenic role." He also says that frequency of occurrence at least equals that of Endamoeba histolytica. No cyst has been described for Dientamoeba fragilis.

"The vegetative form of the ameba, the active pathogenic organism, is quickly killed by the juices of the stomach and intestine."[7] It is the cystic form which, when swallowed, survives the passage through the stomach and greater part of the small intestine and in the terminal ileum and colon is transformed into the vegetative form. These are the active pathogenic organisms which produce the characteristic pathologic change. They settle down in a suitable region of stasis, in a small crypt or in a surface depression in the bowel, and begin their surface attack on the mucosa from which develops eventually a more or less typical amebic ulcer.

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[2] Lynch, K. M.: Protozoan Parasitism in Alimentary Tract, p. 101. The Macmillan Co., New York, 1930.

[3] Brown, P. W.: Nature, Incidence and Treatment of Endamebiasis. J. A. M. A., 86:457-462, Feb. 13, 1926.

[4] Rankin, F. W., Bargen, J. A. and Buie, L. A.: Colon, Rectum and Anus, p. 308. W. B. Saunders Co., 1932.

[5] Rothman, M. M. and Epstein, J. J.: Clinical Symptoms Associated with so-called Nonpathogenic Ameba. J. A. M. A., 116:697-700, Feb. 22, 1941.

[6] Hood, M.: Diarrhea Caused by Diendamoeba Fragilis. J. Lab. & Clin. Med., 25:914-918, June, 1940.

[7] Massie, F. M.: Amebiasis: Cause of Abdominal Pain. South. Surgeon, 9:584-592, Aug., 1940.

PATHOLOGY

The pathology of infection by Endamoeba histolytica is quite characteristic and varies greatly both in extent and appearance. Craig[8] states that even carriers of Endamoeba histolytica show some evidence of tissue invasion. He found ulcerative lesions in the cecum of all of them and concluded that there is no such thing as a healthy carrier. Lesions vary from superficial erosions of the mucous membrane to very extensive ulceration and destruction of large areas of the intestinal coats, with abscess formation in the liver and other organs.

Three types of intestinal lesions occur in amebiasis.[9]

"1. Nodular thickening situated on folds of the mucous membrane, having a minute opening at their apices. These nodules are due to necrosis into the mucous and submucous coats of the intestine.

"2. Ulceration of the surface of these nodules produces the typical elongated irregular, ragged, overhanging type of ulcer with a floor of either the submucous or muscular coats of the intestine.

"3. The presence of sinuses beneath the mucous surface connecting ulcerations.

"It is impossible to state how much of the pathologic picture is due to amebae and how much to the complicating bacterial invasion; however, even in mixed infection the pathologic picture of amebic invasion of the intestine and other tissue is characteristic."

The first site of colonization is the cecum and ileocecal region. From here infestation may spread to the hepatic and sigmoid flexures and to the rectum and it is in these regions where ulcerations are prone to develop; that is, those areas where stasis of fecal mass occur most commonly. The appendix is frequently invaded and may constitute a focus of infection.

In our small series of one hundred twenty-six patients, figure 2 shows the age of distribution, 40 per cent falling between twenty and thirty-five years of age and another 18 per cent between thirty-five and forty-five years. This corresponds with the experience of others; that is, the greatest incidence of infection occurs between twenty and thirty-five years of age.

Age Groups	*Total*	*Per cent of Total*
Children, 11 months and 13 months	2	1.59
6-10	3	2.38
11-15	9	7.14
16-20	10	7.94
21-25	15	11.91
26-30	19	15.08
31-35	17	13.49
36-40	10	7.94
41-45	13	10.32
46-50	8	6.35
51-55	9	7.14
56-60	6	4.76
61-65	3	2.38
66-70	1	.79
71-75	1	.79
TOTAL	126	100.00

Fig. 2. Age Distribution of Cases Observed.

Two infants eleven and thirteen months are included in this series. Both parents of one of these infants were later found to harbor the intestinal parasites and cysts.

So-called carriers are very numerous, and it is from them that many infections originate, as they are continually passing the cysts in their feces.

In our series seventy-one patients (56.35 per cent) were males and fifty-five females (43.65 per cent).

Items Considered	*Patients*	*Per cent of Total*
Flatulence	111	88.09
Nervousness	96	76.19
Fatigue	95	75.39
Abdominal discomfort	90	71.42
Diarrhea (intermittent or severe)	75	59.52
Loss of weight	62	49.20
Fever	44	34.92
Food idiosyncrasy	44	34.92
Vomiting	28	22.22
Normal stool	27	21.42
Mucus stool	26	20.63
Bloody stool	24	19.04
Constipation	23	18.25

Fig. 3. Subjunctive symptoms, noted in 126 patients with amebiasis on admission.

SYMPTOMS

Amebiasis is characterized, if anything, by its bizarre manifestations.

Craig[10] thinks "the majority of so-called symptomless carriers suffer from a chronic mild toxemia due to the often unrecognized infection."

This summary (fig. 3) indicates that the most common subjective symptoms are in order of their frequency: (1) flatulence, (2) nervousness, (3) fatigue, (4) abdominal discomfort, (5) diarrhea (intermittent and severe), (6) loss of weight, (7) fever, (8) food idiosyncracy, (9) vomiting, (10) normal stool, (11) mucous stool, (12) bloody stool, (13) constipation.

This would indicate that flatulence with abdominal discomfort or pain should make one suspicious of amebic infestation. The pain is constant and aching in character, at times radiating down the legs as a vague, heavy, dull ache. Often the pain may be colicky in character, particularly increased by eating and often located in the right lower quadrant of the abdomen. In many there is local tenderness over the so-called appendix area. Diarrhea was present in only 60 per cent of our series.

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[8] Craig, C. F. and Faust, E. C.: Clinical Parasitology, 2d Ed. Lea & Febiger, Philadelphia, 1940.

[9] Portis, S. A.: Diseases of Digestive System, p. 782. Lea & Febiger, Philadelphia, 1941.

[10] Craig and Faust: vide supra, p. 59.

It is unfortunate that the term amebic dysentery has been so widely used for this disease. Dysentery is merely a symptom which is more indicative of the severity of the disease in the individual and has no vital relation to the presence or absence of amebic infestation. Amebiasis, a term which is rapidly supplanting amebic dysentery, means infestation of the human intestine by one or more of several types of amebae.

Weight loss was present in approximately 50 per cent of the cases observed. Fever was present in 35 per cent. This is usually a slight afternoon rise of temperature, often of which the patient is unaware. *Every case of unexplained low grade continuous fever should have stool examinations as a routine in diagnosis.*

The most common local abdominal symptoms are flatulence and abdominal discomfort or pain, and the most common constitutional symptoms are nervousness and fatigue. Obviously, no single symptom or group of symptoms is pathognomonic.

The average length of time from onset of symptoms to time of diagnosis in our series was 16¾ months. Varying degrees of secondary anemia were present in 72 per cent and eosinophilia occurred in 36 per cent. Colon tenderness to abdominal palpation was a rather constant finding, occurring in 73 per cent of our cases.

DIAGNOSIS

The most reliable method of diagnosis rests on identification of one of the types of amebae, either in cystic or active form, in stools, tissues or bodily discharges. Even though the symptoms are those of typical clinical amebic dysentery, one cannot be sure of the diagnosis unless amebae or cysts are demonstrated.

Other methods of diagnosis which may be used when it is impossible to demonstrate the organisms in the stool are: (1) concentration and flocculation, (2) cultivation of amebae from the feces, (3) examination of sections of affected tissues, (4) the complement fixation test.

Use of the proctoscope is of value often when stool examinations are negative. A proctoscopic examination, however, rarely demonstrates the amebae, if stool examinations properly examined have failed to demonstrate them. However, if a dry, thickened, hyperemic rectal or sigmoid mucosa is observed on proctoscopic examination, another attempt should be made to find amebae at a later date.

Our method of examining for amebiasis depends upon whether or not acute diarrhea is present. In those cases with acute diarrhea, the stool is examined as such, no cathartic being given.

Chronic cases are instructed to come to our office without breakfast, when a saline cathartic is administered in a glass of warm water. After taking this the patient is usually able to pass a liquid stool within a short time. The first stool is discarded for examination and the second and third are examined for the reason that they contain more mucus. The essential point is that the stool must be examined immediately after ejection. Examination of the stool is then carried out in the usual manner. Only by recognition of the vegetative or cystic form of the amebae can the exact diagnosis be made. The actively motile trophozite, with its clear glass-like pseudopods thrust out in an explosive fashion, is diagnostically typical of amebiasis. For microscopic examination, mucus or mucupurulent flakes from the surface of the feces are examined.

Living Endamoebae histolyticae are easily recognized by their characteristic movements and their content of erythrocytes. "A clue as to whether or not amebae are present can usually be obtained in suspected patients because of the fact that in uncomplicated amebiasis the specimen contains many red blood cells and very few pus cells. Usually in cases of colitis of a different etiology the reverse is true; there are few red blood cells and many pus cells. This fact has been of great aid in a request for additional specimens in cases where the ameba is suspected and not found in the first examination."[11]

Recognition of the different types of amebae is difficult. It is the opinion of most workers that identification of the cyst yields more reliable results than of the trophozoite. Often only the trophozoite is found and, rather than wait until the cystic stage develops for positive identification of type, they are classified by us as an unidentified type and treatment started. Endamoeba coli and Endolimax nana are difficult to differentiate in the trophozoite stage from Endamoeba histolytica because of the similarity of their pseudopodial motility, ingestion of red blood cells, ectoplasm and nucleus.

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[11] Furrer, E. D.: Amebiasis. Northwest Med., 38:429-431, Nov., 1939.

In our series, Endamoeba histolytica was identified in seventy-two cases (57.14 per cent); Endamoeba coli in thirty-three cases (26.19 per cent); and unidentified ameba in twenty-one cases (16.67 per cent).

Because they are nonmotile, the cysts are harder to find than are the vegetative forms and, therefore, often offer more difficulty to reliable diagnosis than do the trophozoite forms.

DIFFERENTIAL DIAGNOSIS

The various forms of colitis and conditions associated with dysentery present some of the serious problems of differential diagnoses.

Bacillary dysentery is differentiated by its more acute onset, greater prostration, almost constant fever and presence of arthritic symptoms. Mucous colitis has the characteristic mucous shreds and casts. Chronic ulcerative colitis can be differentiated by the more general distribution of ulcerative lesions in the lower bowel and it is here that the proctoscope is most valuable; however, amebic ulcerations may resemble those seen in ulcerative colitis and differential diagnosis must depend on the presence or absence of amebae.

Careful stool and serologic examinations should always be made in all chronic inflammatory lesions involving the colon before surgical intervention is contemplated.

In all patients, on whom a diagnosis of chronic appendicitis is made, a careful stool examination for amebiasis should be routine. In approximately 10 per cent amebiasis is found and institution of antiamebic therapy is usually sufficient to relieve all clinical manifestations.[12]

Amebic granulomata are sometimes encountered and are a result of repeated tissue invasion by amebae causing progressive destruction with replacement by fibrous tissue. The lesion consists of a firm nodular inflammatory mass with small abscesses in the more central areas. These tumors are usually observed in the cecum and sigmoid and may be confused with tuberculoma, actinomycotic or malignant lesions. Differentiation can only be accomplished by examination of the stool.

PREVENTION

Prevention of amebiasis depends entirely upon prevention of contamination of food and water with the cysts of this parasite. A properly filtered water supply, proper sewage disposal, laws preventing the use of human excreta for ground fertilization, protection of food from flies and insects, sanitary plumbing of all buildings in cities and towns, and lastly, examination of all food handlers in public eating places are measures which tend to lessen contamination.

Water, it would appear, is probably the most common mode of transmission of the disease. It is in this medium that cysts will live for a long time. It should be evident that water supplies of many towns and cities, although rendered safe by chlorination as far as bacterial contamination is concerned, may contain cysts of amebae. This particularly applies to those towns and cities that derive their water supplies from lakes and streams directly and without filtration.

TREATMENT

Treatment of amebiasis includes treatment of carriers, of cases of amebic diarrhea, of cases of acute and chronic dysentery and of amebic abscess of the liver. Carriers should be treated whether symptoms are present or not, as such infections are very amenable to treatment, and elimination of the infection may prevent the later development of serious symptoms. Also, such carriers of cysts or amebae may transmit the disease and cause additional infections.

The purpose of treatment is:

1. To eradicate the parasite in the walls of the intestine and in other distant foci.

2. To promote healing of the lesions they have produced.

Drugs used in treatment of amebiasis are those of the ipecac series, the arsenical amebicides and those of the oxyquinoline group.

It is in the acute manifestations with diarrhea and tenesmus that emetine hydrochloride by subcutaneous or intramuscular injection has its greatest usefulness. A total dosage of ten grains is given in a single course. Repetition of the course is seldom necessary for usually the acute manifestations of the disease have subsided before the course has been completed. After this course the case usually becomes one of subacute or chronic amebiasis.

In the treatment of subacute or chronic amebiasis we have used carbarsone capsules, each containing 3¾ grains. This drug is given twice daily for a period of ten days. At the end of this time it is discontinued for an interval of ten days and again repeated as necessary in ten-day courses. Often treatment by mouth is supplemented by carbarsone administered as a retention enema to be retained over night. Two grams of carbarsone are dissolved in 200 cc. of 2 per cent sodium bicarbonate solution, in which the drug dissolves readily. This retention enema is repeated every other night for five times and during this time carbarsone by mouth should be omitted.

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[12] Ochsner, A. and DeBakey, M.: Surgery of Amebiasis. New Orleans M. & S. J., 91:670-678, June, 1939.

Quinoxyl (chiniofon) has been used at times. "It is nontoxic when administered in therapeutic doses." Craig[13] believes that quinoxyl should be preferred to any of the arsenicals because it is less toxic and can be used in mass treatment with safety and efficiency. It may be administered either by mouth or in enema form similar to the administration of carbarsone.

Sulfaguanadine has not proven to be of any value in the treatment of amebiasis, but may be of value in overcoming the concomitant infection that occurs with it.

A high vitamin, smooth diet with a high protein, low carbohydrate content is prescribed.

CONCLUSIONS

1. Over approximately a five-year period stool examinations were run on five hundred eighty-six patients living in and about the Yakima Valley. One hundred twenty-six of these examined stools showed the presence of amebae, an incidence of 21.50 per cent. The most prevalent types of amebae are Endamoeba histolytica (57.14 per cent) and Endamoeba coli (26.19 per cent).
2. In our observations all forms of amebae appear to have a pathogenic role from a clinical point of view.
3. The most common local abdominal symptoms are flatulence and abdominal discomfort; the most common constitutional symptoms are fatigue and nervousness.
4. Amebiasis represents a serious health problem and menace.
5. Suitable and varied treatments result in apparent cures in a high percentage (90 per cent) of cases.

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[13] Craig and Faust: vide supra.

VENEREAL LESIONS OF THE VULVA*

DIFFERENTIAL DIAGNOSIS

Albert F. Lee, M.D.
SEATTLE, WASH.

The female patient with a vulvar venereal lesion presents an important problem to the physician and the diagnostic aids offered are simple and quite accurate. Equally as great as the patient's desire for cure is the public liability charged to the physician in preventing the spread of these infectious diseases. The physician's obligation to the public consists of correct diagnosis, isolation of the patient and consort, if possible, and speedy, efficient cure. This paper is primarily concerned with the correct diagnosis of these cases.

The history of the source of the infection sometimes aids in diagnosis, but often the exposures are either multiple, unreliable or denied. The small initial lesions may even be unnoticed by the patient. It has long been common knowledge, for instance, that many patients with late syphilis (Moore[1] states 30 per cent of all males and 60 per cent of all females) could give no history of the initial infection.

The various physical characteristics of vulvar ulcers are abundantly described but are often misleading to the physician who sees only an occasional case and should, therefore, not serve as the single basis of diagnosis. Three experienced practitioners have been seen to make three different "snap" diagnoses from the gross observations alone of a single lesion. It is this error of diagnosis on physical findings which leads the physician to the therapeutic pitfalls of trial and error in treatment of these cases. Intelligent treatment of venereal vulvar lesions does not include the injudicious use of local antiseptics, caustics, intravenous and other therapies.

Thorough inspection of the perineum does, however, give definite information as to the number of lesions, extent of the local skin involvement, lymphadenitis, vaginal, anal and other regional involvement. Secondary bacterial and fusospirochetal invaders make misleading the symptom of pain. Depth of the ulcers, characteristics of ulcer margins and degree of induration may be altered by symbiotic invaders. In addition, these vulvar ulcers may be double venereal infections or combined with nonvenereal lesions, such as simple abrasions, carcinoma, leukoplakic vulvitis, tinea trichophytina cruris, herpes genitalia and many others.

The most important and dependable aid in differential diagnosis of vulvar venereal diseases is found in the laboratory which supplies the culture media, skin antigens, serologic and microscopic information. It is possible, then, through the laboratory alone to arrive at the correct diagnosis.

Venereal diseases which attack the vulva are syphilis, granuloma inguinale, lymphogranuloma inguinale and chancroid. Gonorrhea, fungus and fusospirochetal diseases of the female genitalia are identified more readily by their vaginal and pelvic manifestations. They usually cause only vulvar

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*Read before a meeting of King County Medical Society, Seattle, Wash., Nov. 17, 1941.

[1] Moore, J. E.: The Modern Treatment of Syphilis, pp. 7-9, C. C. Thomas, Springfield, Ill., 1933.

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reddening and erosions, best diagnosed by examination of other portions of the female genital system. Condyloma accuminatum is a nonspecific lesion accompanying chronic vaginal discharges, venereal and otherwise, and, therefore, is not classed as a venereal disease per se.

SYPHILIS

Syphilis of the vulva may be found as primary, secondary or tertiary infection. The hard chancre of primary syphilis may appear as a single lesion or as multiple lesions of the vulva with as many as four chancres being found in one patient. The incubation period for the primary chancre ranges from ten to ninety days, with an average of twenty-one days. The chancre is usually a small, painless, eroded papule with punched-out, undermined edges and sloping margins. There is little suppuration or tissue destruction and the lesion is usually surrounded by minimal induration and some edema. The satellite bubo is usually found in the inguinal lymph nodes which are the first line of defense for all vulvar lesions.

The untreated chancre always shows the Treponema pallidum in great numbers which are easily seen in dark field, Giemsa, silver method, nigrosine[2] or India ink preparations. The tissue juice from the margin of the lesion is obtained by wiping away the encrusted exudate from the vulva with dry gauze and placing a drop of the serous exudate on a microscopic slide. The tissue juice may also be collected in capillary tubes for immediate transfer to the laboratory. The method of identification of the spirochetes depends upon the equipment available to the physician but the dark field microscope is most generally used. The physical characteristics of the Treponema pallidum are easily learned from standard laboratory textbooks[3] and a little experience. Identification of the Treponema pallidum makes the diagnosis and serves as the basis for immediate, intense, antisyphilitic chemotherapy.

Secondary lesions of syphilis of the vulva are characteristically the condylomata lata, although the disease may be manifest as a diffuse rash, macules, papules or as extension of a vaginal mucous patch. The uncomplicated condyloma latum is again a painless lesion with raw, moist, irregular surfaces with considerable erosion of the skin. There is overgrowth of the epithelium and remarkedly little actual tissue destruction, the whole lesions disappearing spontaneously or therapeutically with little scar formation unless secondary infection has been superimposed. With secondary syphilis there is usually inguinal and general lymphadenopathy and systemic malaise. Again, the Treponema pallidum is easily seen in moist lesions by the above mentioned methods and identification of the spirochete is indication for immediate active treatment.

Tertiary syphilis of the vulva is found as the destructive gumma, occurring from five to seven years after the initial infection and the blood Wassermann is commonly negative. We must rely, then, upon the past history suggestive of syphilis, history of inadequate treatment of a known case of syphilis, and the characteristic caseous, necrotic, destructive mass on the vulva. The gumma is frequently accompanied by elephantiasis of the vulva. Spinal fluid Wassermann, fluoroscopy of the heart and aorta and careful neurologic examination for evidences of central nervous system syphilis should be employed as accessory measures to substantiate the diagnosis of tertiary syphilis of the vulva.

A blood Wassermann should be taken on all cases presenting vulvar lesion but it should be remembered that a negative serologic test does not rule out the disease. The chart below, modified after Jadassohn,[4] is very enlightening in this respect.

Type	*Blood Wassermann Reaction*
1. Primary syphilis	3 to 5 weeks after infection, 20 per cent positive. 6 to 8 weeks after infection, 60 per cent positive. 9 to 10 weeks after infection, 80 per cent positive.
2. Secondary syphilis	Wasserman always positive.
3. Tertiary syphilis	Reaction is negative in large percentage of cases. In latent syphilis, 40 per cent of cases have negative blood Wassermann after first year; 60 per cent thereafter.

Chart 1

Notwithstanding, the blood Wassermann is an entirely essential test and failure to find other causes of the vulvar ulcers speaks for multiple blood Wassermann tests and repeated microscopic search of the moist lesions for the spirochetes. As an interesting sidelight, it has been mentioned by Gellhorn[5] that the milk of a lactating syphilitic woman shows a positive Wassermann reaction for fourteen days following the delivery, although the blood Wassermann may be negative.

GRANULOMA INGUINALE

Granuloma inguinale is a disease of the skin and subcutaneous tissues, causing tenderness, itching and burning. Donovan bodies are thought to be the causative agent in production of granuloma inguinale. Wolfe and Tortora[6] feel that the identification of the Donovan bodies is conclusive evidence of the disease. Greenblatt, Dienst, Pund and Torpin[7] were successful experimentally in producing granuloma inguinale in three out of four individuals by the use of exudate containing Donovan bodies. Donovan bodies could not be cultured by Dienst, Greenblatt and Sanderson[8] from pus obtained from a bubo of granuloma inguinale and they feel that the organism is not a bacterium. McIntosh[9] claims that he has grown the Donovan bodies on various culture media. At present, we can not truly state that Koch's postulates have been fulfilled for the disease.

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[2] Dienst, R. B. and Sanderson, T. S.: Use of Nigrosine to Demonstrate Treponema Pallidum in Syphilitic Lesions. Am. J. Pub. Health, 26:910-912, Sept., 1936.

[3] Todd, J. E. and Sanford, A. H.: Clinical Diagnosis by Laboratory Methods, pp. 568-572, 8th ed. Saunders Co., Philadelphia, 1935.

[4] Jadassohn: Therapd. Gegenw., 65:405, 1924.

[5] Gellhorn, G.: Curtis Obstetrics and Gynecology, 2:636, W. B. Saunders Co., Philadelphia, 1934.

The lesions seem to spread by direct extension or contact and the disease is limited almost entirely to the negro race, although in the past year I saw a case of granuloma inguinale in a middle aged white woman, erroneously diagnosed as carcinoma of the vulva from the physical findings. The incubation period from granuloma inguinale is about fifty days. The degree of inguinal lymph node involvement varies from minimal lymphadenopathy to actual bubo formation. Schoch and Alexander[10] have reported a hypertrophic type of granuloma inguinale resembling lymphogranuloma inguinale. Both small and large areas of skin are involved about the vulva either unilaterally or bilaterally and the surfaces are irregular, moist, raw and dirty with epithelial overgrowth. Margins of the ulcers are ill-defined. Diagnosis is made by identification of the Donovan bodies in the stained fresh or fixed biopsy specimen.

The biopsy is obtained by sponging the ulceration dry and removing a small bit of the diseased tissue from the midportion of the lesion with forceps and scalpel. A few crystals of cocaine dusted upon the area is sufficient anesthesia and local pressure is usually adequate for the slight amount of bleeding which follows the procedure. The tissue is placed upon a dry microscopic slide and teased apart with needles, so that the specimen is thinly spread. The slide is fixed with heat and stained with Wright, Wilson or Giemsa stains. Alexander and Schoch[11] favor Giemsa stain. Donovan bodies are seen within large mononuclear cells and they appear as multiple clear cysts about the periphery. The bodies are often described as bipolar "closed safety-pins" and can sometimes be identified outside of the large mononuclear cells.

LYMPHOGRANULOMA INGUINALE

Lymphogranuloma inguinale is caused by a filterable virus and the incubation period is about four to five weeks. The initial lesion is usually small and may appear on the vulva or in the vaginal tract, either being totally unnoticed. The disease is essentially lymphatic in involvement, causing lymphadenitis, periadenitis and elephantiasis, with vulvar swelling and redundancy.

The inguinale adenitis and periadenitis may localize into an inguinale bubo which becomes fluctuant and full of creamy yellow purulent material. The skin over the bubo becomes reddened and eventually thinned to the point of rupture. The spontaneous or therapeutic rupture of such a bubo gives rise to a chronic sinus tract which may drain for years. Chronic lymphadenitis in the vulva renders the skin indurated and brawny, giving rise to elephantiasis of the tissues of the vulva. Involvement of the perirectal lymph nodes in this disease makes lymphogranuloma inguinale the commonest cause of rectal stricture.

Diagnosis of lymphogranuloma inguinale is made by the use of the Frei antigen which is the attenuated and diluted (1-10) pus aspirated from a bubo in a known case of lymphogranuloma inguinale. The antigen (0.1 cc.) is injected intracutaneously and a positive reaction shows reddening of the skin with induration for about 0.5 cm. around the area of injection, developing within forty-eight hours. This reaction may increase for a week and an actual abscess may form, although no real serious complications have been observed with this test. A positive skin test may remain as a reddened area for several months. The Frei test becomes positive several weeks after the initial infection and remains so for life. Grace and Suskind[12] have prepared a mouse brain antigen which is now available. The diagnostic technic and interpretations are the same as above described.

Pund, Greenblatt and Huie[13] feel that lymphogranuloma inguinale can be diagnosed by the microscopic picture from a biopsy of the lesion but I have not been impressed by the study of sections from the vulva and inguinal lymph nodes. The tissue response seems that of a chronic inflammatory reaction of a nonspecific nature and the cellular picture described is difficult to correlate.

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[6] Wolfe, S. A. and Tortora, E. J.: Granuloma Venereum (Inguinale). Am. J. Surg., 48:625-633, June, 1940.

[7] Greenblatt, R. B., Dienst, R. B., Pund, E. R. and Torpin, R.: Experimental and Clinical Granuloma Inguinale. J.A.M.A., 113:1109-1116, Sept. 16, 1939.

[8] Dienst, R. B., Greenblatt, R. B. and Sanderson, E. S.: Cultural Studies on "Donovan Bodies" of Granuloma Inguinale. J. Infect. Dis., 62:112-114, Jan.-Feb., 1938.

[9] McIntosh, J. A.: Etiology of Granuloma Inguinale. J.A.M.A., 87:996-1002, Sept. 25, 1926.

[10] Schoch, A. G. and Alexander, L. J.: Esthiomene, Form of Granuloma Inguinale. Am. J. Syph., Gonor. & Ven. Dis., 23:718-723, Nov., 1939.

[11] Alexander, L. J. and Schoch, A. G.: Granulome Inguinale; Successful Use of Glemsa Stain to Demonstrate Typical Pathologic Findings. Am. J. Syph., Gonor. & Ven. Dis., 24:180-183, March, 1940.

[12] Grace, A. W. and Suskind, F. H.: Successive Transmission of Virus of Lymphogranuloma Inguinale Through White Mice. Proc. Soc. Exper. Biol. & Med., 32:71-72, Oct., 1934.

[13] Pund, E. R., Greenblatt, R. B., and Huie, G. B.: Role of Biopsy in Diagnosis of Venereal Diseases. Am. J. Syph., Gon. & Ven. Dis., 22:495-502, July, 1938.

Kampmeier, Smith and Larsen[14] have found persistent elevation of serum globulin, with an abnormally high total protein in those whose albumin is normal in various stages of lymphogranuloma inguinale.

CHANCROID

Chancroid, or soft chancre, is caused by the Ducrey's bacillus (H. ducreyi) and the incubation period is from forty-eight hours to one week. The lesions are usually local affairs which start as small papules, giving way to pustules and finally becoming actual ulcers with punched-out edges and a highly necrotic base. The ulcers grow rather rapidly and are quite painful. Fresh ulcers may arise from contact with infected surfaces and the most frequent point for origin of a second ulcer is the opposite vulva. There is bilateral inguinal lymphadenitis, more marked on the involved side and commonly suppuration of the lymph nodes with the formation of a chancroidal bubo.

Diagnosis of chancroid infection is made by identification of the Ducrey's bacillus from a smear of the ulcer base or, as suggested by Sanderson,[15] smear of the bubo pus, stained with Gram's iodine technic. The bacilli are gram-negative rods which lie in chains beside the leukocytes. The bacilli have been cultured from the ulcer base and the unruptured bubo by Sanderson and from this culture is prepared a bacterial diagnostic antigen for intracutaneous use, known as the Dmelcos vaccine. Greenblatt and Sanderson have isolated twenty strains of Ducrey's bacillus from the unruptured bubo and these have homegenous antigenic structure. Skin reactions obtained are similar to commercially prepared vaccines and the European Dmelcos vaccine. Cole and Levin[16] have used heated diluted pus from the bubo in a known case of chancroidal infection for intracutaneous tests and have found satisfactory results. The antigen is injected intracutaneously and 0.1 to 0.2 cc. is the usual dose. The test is read in forty-eight hours and a positive reaction shows reddening and induration of the skin for one to three cm. about the point of inoculation. The skin reddening with the chancroidal test disappears much more readily than the Frei test.

SUMMARY AND CONCLUSIONS

1. Differential diagnosis of venereal diseases of the vulva is an important, yet relatively simple, problem.

2. The laboratory offers the most important and dependable aids in the differential diagnosis of syphilis, granuloma inguinale, lymphogranuloma inguinale and chancroid infections of the vulva.

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[14] Kampmeier, R. H., Smith, D. W. and Larsen, R. M.: Blood Studies in Lymphogranuloma Venereum. Am. J. M. Sc., 198:516-528, Oct., 1939.

[15] Sanderson, E. S.: Chancroid, Granuloma Inguinale and Lymphogranuloma Venereum. J.A.M.A., Alabama, 10:125-128, Oct., 1940.

[16] Cole, H. N. and Levin, E. A.: Intradermal Reaction for Chancroids with Chancroidal Bubo Pus. J.A.M.A. 105:2040-2044, Dec. 21, 1935.

FIBROMA OF THE TUNICA VAGINALIS TESTIS*

WALTER G. SCHULTE, M.D.
SALT LAKE CITY, UTAH

Tumors of the testicle are not rare, but they are not common. Benign tumors are rare. The following is the report of a fibroma of the tunica vaginalis testis that recently came under observation.

K. W. S., 30 years of age, a truck driver by occupation, was admitted to Holy Cross Hospital, June 3, 1941. His family history was negative. His tonsils were removed six years ago. In 1939 he lost the first two phalanges of the index finger of his right hand as the result of an injury. One month before entering the hospital, while at work unloading cement, he fell forward and felt severe pain in the right testicle. He was seen by a physician who diagnosed right direct inguinal hernia. He was referred to the company physician, who did not agree with the diagnosis and sent him to us for consultation.

The patient states that he had been aware of a nodule, with occasional slight tenderness, in right testicle for about five years. At the present time he has pain over right lower abdomen, with some tenderness over outer edge of the rectus abdominis, medial to the anterior superior spine of ilium. At times the pain is so severe that he must hold his side if he strains at stool. Passing gas gives him relief. He urinates frequently, but thinks that is because he drinks a large amount of water. Urination is painless, and there has been no hematuria nor nocturia.

General physical examination discloses a well-nourished man with normal heart and lungs. Head and neck are negative. No supraclavicular gland enlargement. No masses can be felt in the abdomen and there is no tenderness. There is no inguinal hernia on either side. Both external inguinal rings are small. The prostate is not enlarged and there are no indurated areas. Secretion is normal. Left testicle is of normal size and consistency. Right testicle is enlarged, firm and nodular. Nodules can be felt on both sides of the mass, and there is no tenderness. Epididymis well outlined and normal to palpation. Wassermann and Mantoux test for tuberculosis negative. Blood pressure 125/85. Blood count: erythrocytes 5,470,000, leucocytes 9,000, polynuclear neutrophiles 70 per cent, small lymphocytes 30 per cent, Hb 97 per cent. Urine sp. gr. 1.032, acid, albumin and sugar negative, occasional pus cell, no casts.

Diagnosis malignant tumor of testicle, probably carcinoma. Immediate operation advised.

June 4 right testicle was resected under local anesthesia, 1 per cent novocaine. Incision over inguinal ring. Cord and vas deferens ligated with chromic gut and divided within

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*Read before meeting of Salt Lake Surgical Society, Salt Lake City, Utah, Nov. 11, 1941.

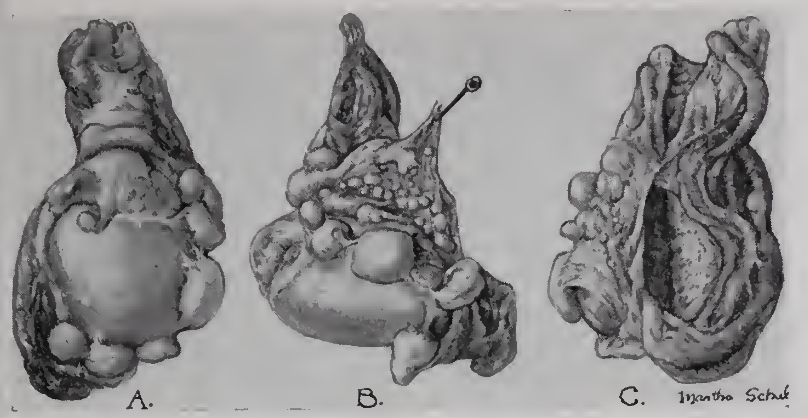

Fig. 1. A, B. Testicle with tunica vaginalis opened, showing fibroid tumors; C. Testicle split, smooth.

inguinal canal. Testicle removed and skin sutured with silkworm gut. On opening tunica vaginalis, it was found to be studded with firm white nodules in places adherent to tunica albuginea (fig. 1).

Pathologic report by Dr. O. L. Ogilvie: Specimen is a testicle. Epididymis not remarkable. Tunica vaginalis opened. Testis proper slightly enlarged by congestive edema. Tunica vaginalis studded with firm, grayish, papillary to sessile nodules. The largest measures 2x1x1½ cm. Cut surface shows them to arise in tunica vaginalis, not to invade the testis. They are uniformly pinkish gray. Microscopic examination shows soft fibromata, mildly inflamed (fig. 2).

Testicle exhibits mild congestive edema, normal epididymis and multiple fibromata of tunica vaginalis. Potentially malignant only.

Patient was discharged from the hospital after four days, with the wound healing. Six weeks later he returned with a diagnosis of acute appendicitis. An acutely inflamed appendix was removed by Dr. Boyer.

Every swelling of the testicle should be considered malignant until proven otherwise (Dean[1]).

There is an agreement of opinion that very few patients with tumor of the testis apply for consultation before six months have elapsed. In this case there had been a nodule with occasional tenderness in right testicle for five years. At time of consultation, there was pain in the lower right abdomen, often so severe that he held his side when he strained at stool.

Whenever a patient, who is known to harbor a malignant tumor of the testicle or recently to have had such a tumor removed, begins to complain of abdominal symptoms, the possibility of metastases to the paraaortic nodes should always be considered (Desjardins[2]). However, it is not always possible clinically to make an exact diagnosis of malignancy.

Tumors of the testicle must be palpated with caution, because of the ease of dissemination of metastases. If hydrocele is present, aspiration of the fluid makes for increased accuracy in palpation (Ferguson[3]). Wassermann and Mantoux tests are, of course, imperative. A Zondek test for prolan A in the urine increases the accuracy of diagnosis. However, if the test shows a minimal amount, or is entirely negative, the possibility that the tumor may be malignant is not ruled out (Hinman[4]). About 20 per cent of the total number of Hinman's patients, who subsequently were proven to have a malignant browth, did not excrete the gonadotropic substance. When the test is negative, but clinical and physical evidence strongly points to tumor, orchidectomy is indicated at once, as it is when the hormonal test is positive.

Ferguson suggests that aspiration biopsy may be done, followed by intensive irradiation if the test is positive. Hinman says that exploration biopsy should be discarded, and early orchidectomy has the following advantages: (1) If metastases have not occurred, the operation will cure the patient, or prevent further spread of the disease; (2) The laboratory is furnished with fresh tissue which is unmodified by irradiation or other treatment and which can be extracted for hormone content and submitted for histologic study; (3) Prognosis: Most embryonal tumors of the teratoid group are radioresistant and very malignant. The true adult

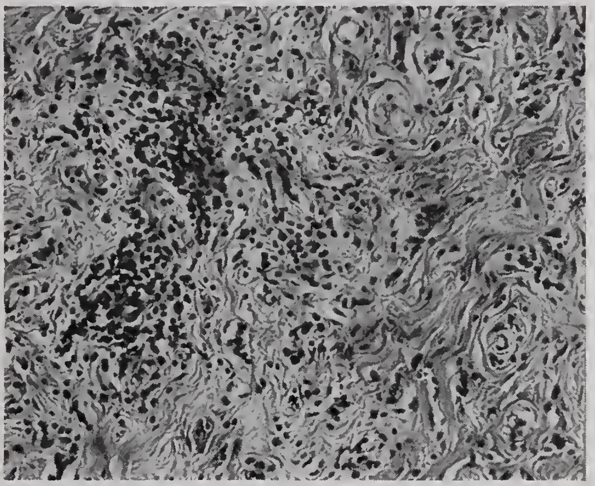

Fig. 2. Microscopic section of fibroma of tunica vaginalis.

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[1] Dean, A. L.: Teratoid Tumors of Testis. J. A. M. A., 105: 1965-1971, Dec. 14, 1935.

[2] Desjardins, A. U.: Retroperitoneal Lymph Nodes. Arch. Surg., 38:714-755, April, 1939.

[3] Ferguson, R. S., Downes, H. R., Ellis, E. and Nicholson, M. E.: Preliminary Note on New Method of Differentiating the Testicular Tumors by Biological Means. Am. J. Cancer, 15:835-843, April, 1931.

[4] Hinman, F. and Powell, T. O.: Management of Tumor of Testicle. J. A. M. A., 110:188-190, Jan. 15, 1938.

teratoma is clinically benign, potentially malignant. Early surgical removal will effect a cure.

There can be no objection to simple castration, if the other testicle is normal. Study of the histologic structure is necessary to prognosis and to outline treatment.

Dean found initial symptoms of 250 patients with testicular tumors to be as follows: painless swelling of testicle, 78 per cent; swelling with moderate pain, 6 per cent; swelling and hardness, 2.8 per cent. He has shown that only 11 per cent of teratoma cases admitted at the Memorial Hospital come under observation with a correct diagnosis.

A malignant tumor of the testis never metastasizes to the inguinal nodes unless it has perforated the capsule of the testis. Metastases to paraaortic nodes may occur without involvement of inguinal nodes. The most common neoplasm of the testis, the embryonal carcinoma or seminoma, and the mixed or teratoid tumors are characterized by early metastases.

Park[6] in 1886 removed a lipoma weighing three pounds from the right tunica vaginalis. Placitelli and Deming[7] in 1933 reported a lipoma of the tunica vaginalis.

Hinman and Gibson[8] state that only two cases of adenoma of the tunica have been reported in the literature, by Muhsam in 1898 and by Nicolopoulo in 1895.

Thompson cites the case of a man, aged 60, who went to the Mayo Clinic in 1930, suffering with hydrocele. A few days after being aspirated, the scrotum began to swell rapidly and become sensitive. There were no signs of inflammation. On examination, a rounded mass 7.5 cm. in diameter was found in the right side of the scrotum. Operation disclosed a cystic mass attached to the parietal leaf of the tunica vaginalis. Pathologic diagnosis was hemorrhagic cystadenoma.

Five cases of adenoma have been reported, in all of which the tumors probably had their origin in the gubernaculum.

Of vascular tumors originating in the tunica vaginalis, three cases have been recorded in the literature. A lymphangioendothelioma by Ridone[9] in 1901, and similar tumors by Nicoletti[10] in 1926 and Scapello[11] in 1927. Nora[11] in 1933 described an endothelioma.

Rubaschow[12] in 1926 collected from the literature reports of sixteen cases of fibroma which he was certain were tumors of the tunica vaginalis. In the case cited by Strickler and Frank[13] the tumors were multiple.

Ochlecker's[14] report in 1930 was that of a man, 26 years old, with a tumor situated in the parietal leaf of the tunica vaginalis.

Thompson describes the case of a man, aged 45, who came to the clinic stating that he had noticed a nodule in the right testicle. There were no symptoms from the enlargement. There was a nodule, 1½ cm. in diameter, closely adjacent to right epididymis. Right epididymectomy was performed. The tumor had the appearance of a fibroid and was well encapsulated. It arose from the dense inelastic fibrous tissue investing the epididymis, which was tough and inelastic, and was apparently the visceral layer of the tunica vaginalis. Microscopic section revealed the growth to be a typical fibroma.

Thompson states that tumors arising from structures surrounding the testis may be impossible to differentiate clinically from those arising in the testis. The majority of these tumors are benign. The tunica vaginalis is of far more importance than the tunica albuginia in regard to their formation. It is sometimes impossible to distinguish these tumors from those arising in adjacent structures.

Only four cases of tumor of the tunica albuginea have been recorded in the literature. They were included in the review of Hinman and Gibson.

Smith[15] does not see the logic of irradiating the primary tumor before removing it. It is possible to perform an orchidectomy without dissemination of the tumor cells.

Priestley[16] considers orchidectomy, followed by extensive irradiation of the pelvis, abdomen, thorax and cervical regions, the treatment of choice in almost every case of malignant testicular tumor.

Preliminary irradiation of the testicle may distort the histologic picture. Then a positive diagnosis of malignancy becomes difficult. This is illustrated by the following case:

An Austrian coal miner, 45 years old, with a large tumor

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[5] Thompson, G. J.: Tumors of Spermatic Cord, Epididymis and Testicular Tunics. Surg., Gynec. and Obst., 62: 712-728, April, 1936.

[6] Quoted by Thompson, vide supra.

[7] Deming, C. L.: Bilateral Lipomas of Tunica Vaginalis. Tr. Am. Assn. Genito-urinary Surgeons, 26:7-12, 1933.

[8] Hinman, F. and Gibson, T. E.: Tumors of Epididymis, Spermatic Cord and Testicular Tunics. Arch. Surg., 8:100-137 (pt. 1), Jan., 1924.

9, 10, 11. Quoted by Thompson, vide supra.

[12] Rubaschow, S.: Die Geschwuelste der Scheidenhaut des Hodens. Arch. klin Chir., 141:14-26, 1926.

[13] Quoted by Thompson, vide supra.

[14] Ochlecker, F.: Fibroplasmocytoma of Spermatic Cord or Tunica Vaginalis. Zentralbl. f. Chir., 57:2363-2367, Sept. 20, 1930.

[15] Smith, G. G., Dresser, R. and Mintz, E. R.: Radiation Treatment of Tumors of Testis. J. Urol., 34: 462-469, Nov., 1935.

[16] Ferris, D. O.: Pathology of Tumors of Testis. Correlation with Excretion of Hormone in Urine. Proc. Staff Meet. Mayo Clinic, 16:615-620, Sept. 24, 1941.

of right testicle, entered the hospital in September, 1934. He stated that he had first noticed the tumor about three months previously. There was no pain, but the testicle continued to enlarge and was heavy in the scrotum. He went to the company physician who referred him for consultation.

There was no history of serious injury, but he had often bumped his testicles while at work in the mine. He had no referred pains, loss of weight nor strength. The mass in the scrotum was hard and he worried about the possibility of its being a cancer. There was no history of malignancy in the family so far as he knew.

Examination revealed a large testicle, measuring 7x5x4 cm., very hard, but not painful. It was slightly nodular. The epididymis was not involved. Aschheim-Zondek test was not done at that time. There was no venereal history, and the Wassermann and Mantoux tests were negative.

Diagnosis was seminoma of the testis and irradiation was advised preliminary to operation. Two weeks after the last irradiation, the testicle had decreased markedly in size, and castration was performed at Holy Cross Hospital.

Grossly there were no marked changes. The tunicas were not adherent. There was a tumor mass, measuring 2x1x½ cm. in the lower half of the testis, close to the globus major of the epididymis, to which it seemed to be adherent. Laboratory diagnosis was tuberculosis of the testicle. A specimen was sent to another pathologist, who confirmed the diagnosis of tuberculosis. Therefore, further irradiation was not carried out.

Eighteen months later the patient was referred to the Mayo Clinic with a painless mass in lower left abdomen. At this time the diagnosis was metastatic carcinoma of the retroperitoneal lymphatics and a request was made for slides of the original tumor. These were forwarded and the diagnosis of seminoma confirmed. The histologic picture had been so distorted by preliminary irradation that it was difficult to make a correct diagnosis.

In discussion of a paper by Ferris,[16] McDonald remarks that "it might be possible to classify testicular neoplasms preoperatively in a somewhat rough fashion by means of studying the excretion of gonadotropic hormone in the urine. However, it is usually advisable to remove the testis surgically in order to eradicate the primary neoplasm, as well as to arrive at an accurate histopathologic diagnosis."

SUMMARY

When the clinical diagnosis is malignant tumor of the testis, immediate castration is advisable. The quantitative test for prolan A may be negative, and the tumor resistant to irradiation, when the histologic diagnosis is carcinoma.

With a benign tumor, no harm can result from the time lost making repeated tests for prolan A, and irradiating the tumor to determine its sensitivity to the roentgen ray, if the Aschheim-Zondek test is negative. However, with malignant tumors metastases may spread at any time, and they are somewhat more likely to be disseminated by repeated palpation and manipulation of the testicle.

With the fresh specimen unaltered by irradiation, the pathologist is better able to make a correct histologic diagnosis, and the amount of prolan A in the tissue may be accurately determined. One can then outline further treatment, and if there are no metastases, or the tumor is benign (about 3.6 per cent of testicular tumors are benign), the patient will be cured.

DIFFICULTIES ENCOUNTERED IN APPENDECTOMY*

John A. Duncan, M.D.

SEATTLE, WASH.

Removal of a diseased vermiform appendix is the commonest abdominal operation performed. It is often a simple procedure, conducing to a nicety of technic which the surgeon enjoys. On the other hand, it may be a most trying ordeal, demanding every bit of skill, patience and ingenuity which he possesses. Unless he is aware of the variabilities in appendicitis with its unusual positions and pathology, and unless his operative ability is equal to the worst of these circumstances, he will occasionally encounter a major disaster.

Unsatisfactory anesthesia is a potent source of difficulty in these operations. A partially anesthetized patient with tense abdominal muscles does not lend to neat dissection, gentle retraction, adequate exposure, accurate hemostasis and other basic surgical principles. The vaporous and gaseous anesthetics, with or without field block or local infiltration, have their advocates. Intravenous sodium pentothal and evipal, alone or supplemental, are popular. Spinal anesthesia serves admirably, although some are prejudiced against it. The objectionable features may be overcome if adequate preanesthetic medication is given and it is administered by one who is skilled in its usage. The latter is an essential in the use of all agents, trouble arising much more frequently from an incompetent anesthetist than from the drug employed.

The proper choice of incision is a great safeguard against subsequent difficulties. No one incision should be used to the exclusion of all others. Incomplete embryonic rotation of the colon, undescended cecum with a high-lying appendix and low pelvic position all call for variation in the site of incision. The point of maximum tenderness is a valuable clue in locating the diseased organ but not an infallible one. Likewise, the certainty or uncertainty of the diagnosis is most important in deciding upon the type, site and length of the incision.

Exposure must be adequate, yet spread of infection from its confines is to be avoided. Drains extending from a diffuse intraperitoneal process through coils of intestine and a medial incision seem unpardonable. Complications which may occur in reference to peritoneal adhesions, secondary abscesses, failure of wound healing, incisional hernia and painful postoperative scars must always be borne in mind.

After opening the abdomen location of the appendix may present a problem. The attack should be orderly, systematic and deliberate. The cecum should be identified. It may be confused with the transverse colon, the latter being readily recognized by attachment of the transverse mesocolon. If the cecum cannot be found in the lower right abdomen, colonic rotation or descent has probably been incomplete and upward enlargement or a new incision may be necessary. Having located the cecum, the anterior tenia coli should be traced downward, usually leading to the appendiceal base. If this is unsuccessful, the incision should be enlarged, the ileocecal junction identified and the under surface of the cecum palpated. The appendix may be buried in the cecal wall. In the odd case it is necessary to incise the lateral reflexion of peritoneum in order that cecum and ascending colon be further mobilized and the posterior region more thoroughly explored.

The procedure of blindly hooking out an appendix is fraught with danger. One can, from experience, usually recognize the friability of the diseased organ and firmness of its attachments. In the odd case, however, or in inexperienced hands, there is definite danger of traumatic rupture with disastrous possibilities. Where the appendix cannot be readily lifted out with an instrument, the safe method of delivering the organ is by gentle traction on the cecum. The finger may be used to ease the appendix through the abdominal wall. This is not what is meant by blind hooking. Retrograde removal is useful when the appendix is embedded in the cecal wall or attached to retroperitoneal structures, yet the base is comparatively free. If the appendix does not come out readily, or if there is question of extent of the disease and adherence of the organ to other structures such as the cecum, ileum, iliac artery or ovary, the incision should be enlarged.

Regarding treatment of appendiceal stump there are divergent preferences in technic. This is an outstanding instance in which surgical procedure has not been standardized and universally adopted, some surgeons preferring to ligate and drop the stump and others to bury it with or without ligation. These methods have all proven trustworthy if properly used. The surgeon should be well acquainted with each method, using the technic of his preference in most cases but utilizing another in the odd situation to which it may seem more adaptable.

For instance, there are cases in which the cecum is bound down or faced in such a way that its wall is inaccessible for insertion of a purse-string suture and inversion of the stump. In such cases simple ligation should be carried out, even if inversion is usually preferred. When the inflammatory process extends into the cecum to the extent that stump ligation or inversion seems inadvisable, it is not unwise to insert a catheter into the cecum and establish a cecostomy at the site from which the appendix has been removed. This is likewise of value when there is considerable intestinal distention associated with appendicitis and often does much to lessen difficulties of the postoperative period.

Indications for drainage in treatment of appendicitis and its complications are not standardized. The tendency is toward less frequent use of drains, excepting where there has been frank abscess formation. In patients where there is free abdominal fluid or pus, drainage is used less often than in the past. This trend is based on recognition of the inability to properly drain diffuse peritoneal inflammations and on the realization that the peritoneum has marked resistive and recuperative powers. Likewise, drains tend to increase adhesion formation, weaken the abdominal wall and prolong convalescence. Hence, it seems wiser to omit drains or, where the abdominal wall has been contaminated, close the peritoneum and insert a drain down to it or pack the wound open. The rationale of this procedure is based on the principle that the peritoneum is less vulnerable to infection and will take care of itself, while the tissues of the abdominal wall will not. True, it will occasionally be necessary to drain a subsequent intraperitoneal abscess.

The local and general use of the sulphonamide compounds is receiving widespread usage in treatment of peritonitis secondary to appendicitis. While reports are most encouraging, it is too early to evaluate their true merit. Choice of the individual drug should be based as much as possible on bacterial studies of the peritoneal exudate by smear and culture. Likewise, it seems advisable to use the more soluble agents if best results are to be obtained.

In summary, operations for appendicitis are usually simple but may be most difficult and complicated. Proper anesthesia, an orderly mode of attack and gentle operating are most important. One should be thoroughly acquainted with the abnormal positions and conditions of the appendix as well as with the variations in technic. Likewise, he should be familiar with the recent trends in handling difficult and complicated cases, since they offer definite improvement in results.

VITAMIN B_1 IN HEART DISEASE

CASES OF ADULT AND CHILD RESEMBLING ACUTE RHEUMATIC FEVER

Oliver J. Morehead, M.D.
RITZVILLE, WASH.

My experience in private practice in a prosperous rural community has convinced me that vitamin B_1 deficiency of a serious degree is far more prevalent than generally realized. During the three years ending July 1, 1941, I treated intensively 247 cases of supposed vitamin B_1 deficiency by administration of vitamin B_1 solution intravenously. This involved the use of about 126 Gm. of thiamine hydrochloride.

Of the total cases, sixty-eight showed heart involvement of some degree, from mild to very severe. Two of these I have already reported in Northwest Medicine. The present communication recounts my experience with two more cases. These seem of especial interest because both present features in common with early, acute rheumatic fever and both responded dramatically to the use of vitamin B_1 intravenously.

(A comprehensive and authoritative review of the relationship of vitamin B_1 deficiency to certain types of circulatory failure is that of Weiss and Wilkins.[1] The reader is referred to this paper for details of symptomatology and suggestions as to treatment.)

Early in November, 1938, Mrs. T. S., age 30, presented herself with complaint of poor appetite, loss of weight, insomnia, nervousness and a recently developed mild arthritis of the shoulder. Temperature and pulse were normal and the general physical condition apparently not of significance except that two impacted and infected upper third molars might be incriminated. The past history was also apparently irrelevant. There was one child eight years old. Economic conditions were noncontributory.

After a week of general treatment (rest, salicylates, sedatives) the patient seemed much improved. One of the impacted teeth was then extracted. An exacerbation of all signs and symptoms immediately appeared. Temperature rose to 100° F., pulse to about 100 per minute and both ankles became swollen and painful. Treatment was continued as outlined above, with local attention to the inflamed and draining socket.

Two days later I was conducting a confinement in a nearby home when I was called about 2 o'clock in the morning and told that Mrs. S. was suffering great pain and was unable to sleep. I made a hurried investigation. Temperature was now 102½° F., pulse 125 per minute. Both lower extremities were being supported by soft pillows and a generalized edema was so severe that the features were scarcely recognizable. A mild delirium was present which I ascribed to a barbiturate the patient was taking. Because the findings as described fitted so well with those of vitamin B_1 deficiency with cardiac involvement, I at once administered 40 mg. thiamine hydrochloride solution intravenously and ordered all other medication discontinued.

An hour later I was astonished to find the patient in sound sleep, pulse about 100 per minute, temperature down two degrees and the generalized edema so markedly reduced that the skin was visibly wrinkled. The patient had called for the bed pan several times, but the amount of urine passed had not been estimated.

Ten hours later tachycardia and restlessness again appeared. Once more the same satisfactory results followed the use of vitamin B_1 solution intravenously. Thereupon I decided to administer the vitamin in doses of 20 mg. every six hours in the hope of maintaining the patient in a permanently improved state. Steady gain was noted.

For several days this routine was followed, then the frequency of administration was reduced to two or three times a day. After a week the dosage was again reduced, now to 10 mg. once a day. Complete recovery ensued in about a month. This patient received a total of 430 mg. vitamin B_1 during a period of twenty-six days. No relapse has occurred.

Case 2. September 1, 1939, B. S., a girl, 7½ years old, was brought to my office by her parents with complaint of nervousness, nausea and vomiting three days, moderate fever and abdominal pain. For several months the child had complained of abnormal weakness and tiredness. The only pertinent incident in the past history was that when the patient was about four years old I had removed her tonsils because of repeated severe attacks of tonsillitis, frequent colds, poor appetite and underweight. Response to this operation was prompt and satisfactory.

The patient appeared normally developed and nourished. She was very apprehensive, an unusual trait. While lying on the examining table she was distinctly dyspneic. Almost casual inspection revealed a precordial throbbing coincident with the heart beat. The abdomen was soft and not tender. Respiration was about 30 per minute, pulse 150 to 160 and the temperature by mouth 101½° F. Percussion showed the heart outline extending beyond the nipple line to the left. There was no complaint of joint pains. The physical condition was not otherwise significant. I regret that facilities for doing sedimentation rate tests of the erythrocytes of these two patients were not available.

Because of previous favorable experience with vitamin B_1 in cardiac cases I decided at once to try that agent. Accordingly, I administered 10 mg. vitamin B_1 solution intravenously. An hour later improvement was very marked, as indicated by substantial fall in pulse rate, temperature and respiration. The patient asked for a hamburger sandwich, which she ate and retained. Next morning she was again nauseated. Once more I administered the same dose of vitamin B_1 intravenously. The patient was put on a high vitamin diet with a vitamin B_1 complex preparation of known potency by mouth. No further parenteral treatment was required. After a week the child was back in school. She has had no sickness of any kind since that time.

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[1] Weiss, S. and Wilkins, P. W.: Disturbances of Cardiovascular System in Nutritional Deficienry. J.A.M.A., 109: 786-793, Sept. 4, 1937.

SUMMARY AND CONCLUSIONS

Two cases of acute heart involvement are presented, one that of a woman thirty years old, the other that of a seven and one-half year old girl. Both are highly reminiscent of early, acute rheumatic fever. Both showed prompt and striking improvement on administration of vitamin B_1 solution intravenously.

It is not to be inferred that this method of treatment would be equally efficacious in more advanced cases, where infection and perhaps permanent damage have supervened.

The thought occurs that at least some cases diagnosed as early, acute rheumatic fever might well be treated with vitamin B_1 solution intravenously. I believe this conclusion is justified from a perusal of the literature.

POSTGRADUATE LECTURES

Postgraduate courses of lectures are scheduled each year for the profession in our three states. It has been customary to list them in this journal under headings and dates as they occur from month to month. In this issue notice is given of those which have been received for publication.

OREGON

Portland Academy of Medicine
Portland, February 4-6

University Oregon Medical School
Alumni Association Annual Meeting
Portland, March 23-28

General Postgraduate Session and
Ernest A. Sommers Memorial Lectures
Portland Academy of Medicine
April 13-15

American College of Surgeons Sectional Meeting
President, Ralph A. Fenton, Portland
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Portland, April 27-30

Pacific Coast Oto-Ophthalmological Society
Portland, May 11-14

Pacific Northwest Medical Association
Portland, 17-20

Other courses of lectures not specified herein are solicited for the purpose of featuring them from month to month. More detailed information will be included for each one if the data are received for that purpose. This form of publicity will depend upon the attention of those sufficiently interested to forward the information.

WASHINGTON

The University of Washington Postgraduate Lectures, which have appeared regularly for twenty-five years with the exception of 1918, will be canceled for this year on account of war emergency. It is expected to resume them in 1943.

Spokane Surgical Society

The annual meeting of Spokane Surgical Society will be held in Davenport Hotel, Spokane, April 25. Richard B. Cattell of the Lahey Clinic will be the guest speaker.

Dr. Cattell will deliver lectures on the following subjects: "Diseases of the Thyroid Gland," "Common Duct Obstructions," "Selection of Operation for Carcinoma of Colon and Rectum."

IDAHO

The fiftieth annual meeting of Idaho State Medical Association will be held at Sun Valley September 16-19. The program for this meeting will consist of postgraduate lectures. The lecturers will come from the faculty of University of Oregon Medical School.

SULFATHIAZOLE OINTMENT EFFECTIVE FOR IMPETIGO CONTAGIOSA

The average time required to cure 40 patients with impetigo contagiosa, a contagious inflammatory skin disease, by local application of sulfathiazole (a derivative of sulfanilamide) in ointment form was nine and one-half days as compared with from twelve to sixteen days required with the previous conventional treatment, L. H. Winer, M.D., and E. A. Strakosch, M.D., Minneapolis, report in *The Journal of the American Medical Association* for January 17.

The two physicians explain that among the pus producing infections of the skin, impetigo contagiosa is the most superficial and also the most common.

❧

RECOVERY FROM PERITONITIS ATTRIBUTED TO SULFANILAMIDE DERIVATIVES

The case of a child with generalized peritonitis (inflammation of the membrane lining of the abdominal cavity) and acute appendicitis in whom an operation was inadvisable, whose recovery is attributed to injections of sodium sulfathiazole into the vein and of sulfapyridine directly into the abdominal cavity, is reported in *The Journal of the American Medical Association* for January 24 by Julius Gottesman, M.D., and Harold Goldberg, M.D., New York.

❧

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Herbert H. Thomas, Myrtle Point.

Executive Committee

W. W. Baum, Salem, Chairman; E. H. McLean, Oregon City; Henry Garnjobst, Corvallis; C. W. McCain, Hood River; G. I. Hurley, Eugene; D. R. Ross, Salem; E. E. Gambee, Portland.

ORGANIZATION ACTIVITIES

The Council of Oregon State Medical Society met in Portland, Saturday, January 10. By-laws of Oregon Physicians' Service were read, discussed and approved. Trustees represent various parts of the state, and there cannot be more than one from any one county.

The following members of Oregon State Medical Society are the Trustees:

W. W. Baum, Salem.
J. B. Brennan, Pendleton.
L. M. Spalding, Astoria.
G. I. Hurley, Eugene.
Thompson Coberth, The Dalles.
R. R. Belknap, Ontario.
Ralph W. Stearns, Klamath Falls.
E. R. Durno, Medford.
J. D. Rankin, Coquille.
H. Garnjobst, Corvallis.
Earl M. Anderson, Portland.

The Board of Directors of O. P. S. consists of:

W. W. Baum, Salem	President
J. P. Brennan, Pendleton	Vice-President
L. M. Spalding, Astoria	Secretary
G. I. Hurley, Eugene	Treasurer
Thompson Coberth, The Dalles	

The budget for 1942 was approved at the proposed figure of $16,537.41, with an estimated income of $17,900. The Council voted that it woud not participate in the Pacific States Medical Conference in 1942.

The Farm Security Administration Clinics were approved at Portland and Salem, provided they would be under supervision of the local medical society. Also discussed was the yearly examinations required of teachers in the public schools. It was proposed, and the Council gave its tentative approval, to districting the state for interpretation of roentgen films which are required by law in certain instances.

STATE BOARD OF HEALTH

Northwest Regional Conference on Social Hygiene

Multnomah Hotel, Portland, Thursday, February 12

Purpose of the conference is to evolve an integral plan for combating venereal disease in wartime; to cooperate with the armed forces and the U. S. Public Health Service in lowering the incidence of venereal disease in the armed forces and among workers in vital defense industries. Sponsor of the conference: Division of Social Hygiene Education of University of Oregon Medical School, Adolph Weinzirl, head.

Postgraduate Course

The Division of Maternal and Child Health sponsored sixteen private physicians for attendance at the postgraduate session in Obstetrics held at the University of Oregon Medical School January 19-23. The course was considered to be a very successful one by all men attending. This course was similar to the Pediatrics session held in December, 1941, which was also considered to be very successful.

Samuel D. Allison, Venereal Disease Control Officer, left the state to accept a similar position for the Territory of Hawaii.

U. OF O. MEDICAL SCHOOL

All efforts of the University of Oregon Medical School's administration now center on that one little word—WAR.

The school is cooperating with seventy-five other recognized U. S. medical schools in plans for lopping a year off the regular four-year course to provide more physicians for wartime needs. It has been proposed that first-year medical students begin their courses about July 1 instead of in September and October. Vacations would be cut to a minimum and colleges would operate on a twelve-month calendar year. Under such a plan it is estimated the nation's medical schools would graduate 5000 more physicians in the next three years than heretofore.

The switchover is presenting problems. Chief among these is the medical student who earns all or part of his money for tuition. Eighty per cent of the school's enrollment now depends on summer work to finance the school year, according to Associate Dean David W. E. Baird. If federal aid is not forthcoming for the fellow who works summer vacation, he is going to be in a very tough spot.

Federal aid has already been extended to the nursing ranks. Enrollment in the school's department of nursing education is at a high mark, thanks to the granting of federal scholarships.

According to Miss Elnora Thomson, head of the department, winter quarter's enrollment was twenty-eight beginners as against five for the same time in 1941. The government provides $55 for Oregon resident tuitions and maintenance where necessary.

But there has been no sign of this Uncle Sam help for the man who would be a doctor, yet does not have a pocketful of greenbacks.

Thirty-eight women, most of them homemakers, have deserted their firesides to attend "refresher" courses offered by the department of nursing education. They are brushing up in theory and practice in order that they may be ready to fill local positions when younger nurses are called overseas for war service.

"The school is working hard on plans for condensing courses into a shorter period of time," says Dr. Baird, "but I must emphasize that there will be no reduction in the standards of instruction or the content of the medical course."

Plans for placing the medical center on a war basis are rapidly being put into effect. Students and employers have given attention to first aid training. Blackout preparations have been carried out on a large scale.

Handling traffic that would result, if and when the enemy bombs Portland, offers problems. The school, perched on Marquam hill, has limited road entrances and exits which complicate the picture.

Sandbags, additional hose length and other fire fighting equipment have been added to the school's equipment, according to Ralf Couch, administrator of medical center hospitals.

Status of postgraduate sessions was a bit in the air immediately following Pearl Harbor. A thorough course in chest diseases, arranged by Ralph C. Matson for the week of December 7, was cancelled. But the last of December's pediatrics session was held and drew forty doctors from Oregon and Washington. Health departments of the two states cooperated in sponsorship of the session.

A mid-January course in obstetrics and gynecology was on the books and the school is making preparations for the general session March 23-27. The general meet is given under auspices of the school and University of Oregon Medical School Alumni Association, of which Richard Adams is president.

"The fact that we are in the war, in which medical knowledge plays such an important part, makes it all the more important that doctors attend refresher courses," said Dr. Adams in urging a banner attendance at this year's meet. "An excellent program is under preparation and all indications point to an outstanding session for 1942."

An "extra" at the session is the Ernst Sommers memorial lecture series which was first associated with the general session last year. The late Dr. Sommers provided a fund for bringing outstanding men to the campus for lectures.

STATE BOARD OF MEDICAL EXAMINERS

The Board of Medical Examiners met at the Board offices on January 23. They set the date of the next meeting for April 7 and tentatively selected July 22-24 as dates for the next state board examinations. These latter dates may be changed in order to meet the present military emergency.

A license to practice medicine and surgery, based on reciprocity with Iowa, was ordered issued to Edward Semansky, of Shenandoah, Pennsylvania. Licenses to practice osteopathy and surgery were ordered issued to Guy Francis Dunn, D. O., of Scottsbluff, Nebraska, based on reciprocity with Nebraska, and to Carl Ramon Lambert, D. O., of Wichita, Kansas, based upon reciprocity with Missouri.

It was reported to the board that ninety-four physicians and surgeons are now serving from Oregon with the armed forces of the United States. These physicians will be so listed in the board directory and report to be published in March.

Attention is called to the fact that registration fees for the year 1942 are now delinquent and delinquent notices are being sent out, advising that on and after February 26 licenses will be subject to revocation for nonpayment of the 1942 registration fee and licentiates will be subject to fine. It is also pointed out that failure to register immediately will result in exclusion of the delinquent physicians' names from the annual directory.

MEDICAL NOTES

County Wide Blood Typing is being sponsored in Clatsop County by the American Legion Post No. 12 under the auspices of Clatsop County Medical Society and the County Health Service.

Glen Ten Brook of Vernonia has assumed the practice of Marshall A. Rockwell who is in California taking postgraduate work.

Seaside Hospital went under new management last month as Miss A. E. Atkinson took over the operation.

Eugene Moon has been appointed county physician for Union County.

V. Chronovsky has resigned as welfare physician for Clackamas County to enter practice in Prairie City in association with G. C. Van der Vlugt.

Hospital Facilities are completely established at the Medical-Dental Clinic in Redmond under the direction of R. W. Christiansen and Mrs. Rosa Hickman.

Louis J. Wolf has retired as Health Officer for Multnomah County and will resume his duties as physician in charge of the City Isolation Hospital. The hospital has been admitted recently to the A. M. A. hospital register.

OBITUARIES

Dr. Alexander Bradfield, of Tillamook, died October 28, at the age of 34. The cause of death was cellulitis of the throat and agranulocytosis.

Dr. Rollin S. Gregory, of Portland, died November 23, at the age of 77. The cause of death was carcinoma of right foot with carcinomatosis.

Dr. Guy F. Via, of Forest Grove, died December 8, at the age of 61. The cause of death was stricture of the ascending colon complicated by surgical shock.

SOCIETY MEETINGS

JACKSON COUNTY MEDICAL SOCIETY

The twentieth annual banquet and election of officers of Jackson County Medical Society was held January 14. E. R. Durno was elected president to succeed Harvey A. Woods.

KLAMATH COUNTY MEDICAL SOCIETY

J. G. Patterson was elected president of Klamath County Medical Society at its regular meeting on January 14. E. D. Johnson was elected vice-president and Samuel D. Earhart secretary-treasurer.

LINN COUNTY MEDICAL SOCIETY

The regular meeting of the Linn County Medical Society was held January 15. W. W. Baum, President of the State Society, spoke on "Policies and Activities of the Oregon State Medical Society." Charles P. Wilson outlined the postgraduate opportunities available to Oregon physicians.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SPOKANE, AUG. 17-19, 1942

REHABILITATION OF DEPARTMENT OF LABOR AND INDUSTRIES PATIENTS

The Committee on Industrial Insurance and Health of the State Medical Association, headed by H. T. Buckner, has issued a report of one month's experience of a plan devised by the Department of Labor and Industries which it is hoped may be placed in operation throughout the state. It is the experience of a month's trial in Tacoma and its geographical area which was submitted by H. J. Whitacre who is designated as assistant medical advisor to the department in that area. If the plan continues to prove successful the department will next endeavor to establish the plan in King, Spokane and other counties of the state.

REPORT OF ASSISTANT MEDICAL ADVISOR TO WASHINGTON STATE DEPARTMENT OF LABOR AND INDUSTRIES

December 15, 1941, to January 15, 1942
in the Geographic Area of Tacoma

The program was explained by W. E. Steele, Medical Advisor of the Department, at a regular meeting of Pierce County Medical Society. Subsequently a bulletin was posted in each of the three hospitals concerned. Thirty consultations with full reports to the department were made. Fifty-one progress reports were made. Ten authorizations for treatment have been made.

There have been about twenty patients in the three hospitals at a given time. The cases seen are classified as follows:

Abdominal injury, 1.
Acromioclavicular dislocation, 2.
Amputations, finger, 2; thigh 2.
Ankylosis of knee, 1.
Bursitis, shoulder, 3; olecranon, 1.
Duodenal ulcer, 1.
Dupuytren's finger cast, 1.
Eye, 2.
Femoral artery injury, 1.
Fractures, colles, 1; femur, 4; forearm, 1; humerus, 2; jaw, 1; leg, compound, 2; simple, 1; metatarsals, 3; os calcis, 5; Potts, 1; patella, 1; pelvis, 1; ribs and hemothorax, 1; sciatica, 1.
Spine, cervical, 1; lumbar, 3.
Sternum, 1.
Tarsus, 2.
Hand infections, 2.
Hernia, 2.
Malingerer, 1.
Sarcoma, femur, 1.
Semilunar, 1.
Tendons of hand, 6.

The medical profession has cooperated fully, and has welcomed the service. Generally speaking, good, scientific surgical care has been given by the individual physicians. Consultation has been sought, not imposed. I am quite certain that an increased alertness in the treatment of industrial cases is evident.

Specific evidence justifying the program is given by the following examples: Rehabilitation measures for the repair or preservation of soft tissues and joints has been strongly emphasized. Active muscle action during splinting; early removal of casts for joint motion and massage were possible; efficient physical therapy after the removal of casts; and use of expert physical therapists has gained new impetus. Perfunctory physical therapy by lights and foot baths are not acceptable. Splinting of soft tissue wounds and infrequent dressings are recommended.

The present day standardized management of compound fractures has been discussed freely and frequently in consultations. Fracture cases with delayed union were under consideration for bone graft. Both have healed under weight bearing.

Two cases of subdeltoid bursitis that looked to be serious have been returned to work after two and three weeks of expert physical therapy. One case of subdeltoid bursitis, that had been on compensation for one year, was brought to operation for removal of well demonstrated calcium in the supraspinatus tendon and the bursa. This patient gives good promise of recovery.

In one case of minor abdominal injury persistent complaint of pain in the abdomen led the physician to request authority for abdominal operation for adhesion. My examination revealed a severely inflamed prostate. After four prostatic massage treatments the pains were gone and he is able to return to work.

A second prostatic case is a man who had a pelvis contusion with no findings other than the prostate. He is a typical "compensationitis" case and refuses treatment. I am advising that compenstaion be stopped at once.

The exacting requirements in reduction of fractures of the os calcis have not been appreciated by some physicians handling these cases. There have been five during the month, and I feel certain that a good reduction in all will give satisfactory weight bearing and minimum permanent partial disability.

One bad hand infection with palmar abscess has been rescued from total loss of hand function and will come through with restricted motion in the middle finger. Two hand infections have been seen early and palmar abscess prevented. Three cases of divided tendons that were not sutured at the time of injury have come to my attention. These tendons have been or will be sutured.

In one case a heavy crushing injury had torn away or lacerated most of the soft tissues on the palmar surface of the middle finger. The tendon sheath was torn but the tendon was intact. Conservative tendon sutures and early grafting have given this man a good finger with almost complete motion.

I feel sure that a statement should be made relative to the time and service required for the operation of this program. The service is very time consuming and exacting in its detail. The program must be operated upon an ethical consultation basis. This means that the attending physician must be called, if I am informed by the hospital. The consultation must be at the time of choice of the attending physician. The report must be dictated to my stenographer, later read and signed, then a copy sent to the physician in charge. My copy of the report is then filed in a special container and a note made in my date book to see the patient in ten days.

The progress report made at the end of ten days is simple, yet in many instances the physician in charge must be contacted one or more times. A pleasing but arduous part of the work is the fact that the physician in charge frequently looks upon me as a continuous consultant and wants to talk over the case. I am glad to have him do this.

A request for authorization is quite time-consuming. The doctor calls me by phone and tells me about the case. I tell him to send the patient to my office; I am to make an examination. I call him and, if it is physical therapy, tell him that I approve if he will send the case to our expert physical therapist. He says fine, will call the physical therapist and tell her what to do. It is a Bureau case and I can't spend their money so I call Dr. Hopkins; he says O.K., will you call the physical therapist. I call the physical therapist then write out my report to the state and in addition write out an authority slip for the physical therapist, do my filing and make a note in my date book to see the patient at the end of the period of authorization.

This sounds like a backbreaking procedure but it cannot be done in any other way. This service in this particular case cannot be done from Olympia and, in my estimation, it is one of the very strong arguments for the program. The patient, the doctor and the state benefit by promptness of action.

In one instance just before my period of service a physician requested a thirty-five dollar brace for a thigh. Authority was granted. This brace did the man no more good than if applied to the flag pole in the front lawn.

Secretarial work is a real problem. My secretary is an expert medical stenographer and has good speed, yet, with this work added to her regular secretarial work in the office, she has had to do some of this work at night.

There is no way of keeping a record of the number of telephone calls that have been added to our two-trunk line. I do not believe that our lines have been embarrassed. I am not able to estimate the hours per day that have been consumed.

In conclusion I would say:

1. The program has been unanimously accepted by the medical profession.
2. Injured men are pleased with the service and look upon me as their friend.
3. The quality of surgical care to the injured men has been considerably advanced.
4. The program has proved its value.
5. The state fund has been saved many times over the cost of operation.
6. The service has been a pleasure and not too burdensome.

H. J. Whitacre,
Assistant Medical Advisor to the Department of Labor and Industries.

WASHINGTON PHYSICIANS FOR SELECTIVE SERVICE

What the ultimate demands of World War II will make upon the physicians of Washington is indicated by an announcement recently issued by the national headquarters of the Procurement and Assignment Service, known as "Recommendations to All Physicians with Reference to the National Emergency," published in this issue of Northwest Medicine and dispatched in a Bulletin by the Committee on Medical Preparedness of the state association.

In his report to the Board of Trustees of the state association Raymond L. Zech, Chairman of the State Medical Preparedness Committee and state chairman of the Procurement and Assignment Service, declared that a check of the records shows that there are 1,865 physicians in the state, of whom 106 are retired or not practicing. The 1,865 do not include physicians in federal services or agencies. This figure, also, does not include 104 physicians who are members of organized medicine, in active military and naval services.

A breakdown of the number of physicians in the state, members and nonmembers of the State Association, between the ages of 27 and 44, shows a total of 693. If 15 per cent is deducted from this figure for disability, approximately 590 physicians may be called within the near future for active military and naval services. Accordingly, it may be assumed that one-third, one one out of every three, will be called into active service.

This does not exclude physicians forty-five years of age or older who desire to enroll for active service or who may even be called by military demands. Nor does it include army and navy base hospital units such as Base Hospital No. 50 which, when called, would take another fifty physicians.

The State Preparedness Committee, in making its report, listed the number of physicians in each age bracket in the state as follows:

Age	No.	Age	No.	Age	No.	Age	No.
27	4	44	33	61	38	78	8
28	12	45	34	62	43	79	12
29	22	46	37	63	57	80	8
30	25	47	27	64	65	81	9
31	46	48	31	65	44	82	11
32	38	49	23	66	39	83	6
33	51	50	34	67	48	84	5
34	59	51	20	68	52	85	3
35	55	52	39	69	38	86	4
36	42	53	43	70	38	87	4
37	40	54	30	71	32	88	1
38	46	55	25	72	28	89	1
39	45	56	34	73	23	90	0
40	42	57	33	74	17	91	0
41	43	58	23	75	19	92	1
42	54	59	36	76	9	93	0
43	36	60	34	77	13	94	1

PHYSICIANS WANTED

The central office of Washington State Medical Association has on file the following requests for physicians:

The Vancouver Medical and Surgical Clinic, 410 Arts Bldg., Vancouver, is in need of a well-trained laboratory and X-ray technician. Salary an open matter.

Physicians needed for Alaska by United States Engineers. Position extends one to two years. Must be single. Salary, $4700 with allowance. Contact Mr. Betsill, 605 Arctic Bldg., Seattle.

N. Y. A. Training School, Seattle, needs full time physician. Living quarters provided. Can be married. Salary $300 per month with quarters. Contact Mr. Coburn Allen, National Youth Administration, Washington Bldg., Tacoma.

Social Security Department, State of Washington, Olympia, desires X-ray and laboratory technicians for county hospitals in state. Contact Calvin J. Nichols, Personnel Office, Olympia.

Physicians, who may be interested in positions as medical heads of state institutions, salaries running from $5,000 and up, are advised to contact the Central Office of the Washington State Medical Association, 218 Cobb Bldg., Seattle.

PAPERS FOR ANNUAL MEETING

The annual meeting of Washington State Medical Association will be held at Spokane August 17-19. Any member wishing to present a paper at this meeting is requested to communicate with R. E. Mosiman, Stimson Bldg., Seattle, Chairman of Program Committee, giving title of his paper.

MEDICAL NOTES

Seattle Defense Plans. Disaster Relief Committee of King County Medical Society has made extensive plans for immediate mobilization of physicians, hospitals and supplies in case of bombing or other emergency. Hospitals are ready to provide 1,600 additional beds immediately; operating teams have been assigned to hospitals and specific operating rooms; receiving officers have been appointed. Approximately 1,500 ambulance corps volunteers are ready; transportation and communication organizations are ready to function. Plans include possibility of complete disruption of telephone communication and loss of bridges across the canal. The entire organization is prepared to go into action within a very few minutes.

Navy Hospital to be Built at Seattle. Headquarters of the 13th Naval District at Seattle have announced projected building of a five hundred bed hospital near the Naval Air Station at Sand Point. It will consist of a series of one story frame units connected by covered passages. The tract is sufficiently large to permit expansion to an ultimate capacity of one thousand beds if necessary.

Everett Hospital Gets Plasma Bank. A fraternal association in Everett has presented Providence Hospital with a check for $500 for purchase of equipment with which to set up a plasma bank.

Hospital Offered to Port Townsend. J. Velasquez De Leon has offered use of Bayview General Hospital at Port Townsend to the city for wartime needs. Dr. De Leon, prominent in Filipino circles, was at the time of the offer planning to return to the Islands to serve with the forces under General Douglas MacArthur.

Official Positions. R. S. Hamilton has been appointed county-city health officer for Clallam County and the city of Port Angeles. He replaces A. E. Eyres, who recently resigned. C. L. Longstreth has been appointed health officer for Bellingham.

King County Seeks Federal Funds. Commissioners of King County expect to apply to the Defense Public Works Division of the Federal Agency for funds to build a two-hundred bed addition to King County Hospital at Seattle. Application is made on the grounds that the present hospital facilities are overtaxed, due to influx of defense workers.

Plasma Donors Called. The Red Cross has called for blood plasma donors in Seattle. Clyde R. Jensen, chairman of the committee, will supervise collecting and storage of ample supplies which may be flown to any point of need in the West or in Alaska.

Red Cross Purchases Supplies. A committee of the Red Cross Disaster Relief Commission, headed by James H. Berge of Seattle, has called for bids on supplies for a fifty-bed mobile hospital unit. Complete equipment will be held at a central location, from which it may be dispatched to any place of need in King County.

Hospital Associations to Meet. Association of Western Hospitals and the Western Association of Catholic Hospitals plan a joint meeting in Seattle April 13-16. It is expected that 2,500 to 3,000 will attend the meeting.

Scrap Iron to Buy Supplies. Granges, commercial clubs, P.-T. A.s and similar organization in Kitsap County are collecting scrap iron which will be sold to provide funds for medical supplies for the area. The supplies will be used in emergency relief depots.

Wedding. James Tate Mason, Lieutenant in the Medical Corps of United States Navy and son of the late James Tate Mason of Seattle, was married to Miss Beth Thomas at Bluefield, West Virginia, January 8.

OBITUARY

Dr. Stephen Dolphard Brazeau of Spokane died January 1 after a long illness. He was sixty-six years of age. He was born in Wisconsin City, Wisconsin, and received his medical education at the University of Michigan at Ann Arbor, graduating in 1904. He came to Asotin, Washington, in 1906 and later moved to Spokane, where he practised for thirty years.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Cowlitz County Medical Society held its regular dinner meeting January 21, Hotel Monticello, Longview. Speakers were John H. Fitzgibbon who gave a talk on "Gastritis," illustrated with slides of gastroscopic pictures of the stomach, and Blair Holcomb who talked on "Obesity." Both speakers were from Portland, where they are affiliated with University of Oregon Medical School.

T. H. Biggs, Cowlitz County Health Officer, was admitted to membership.

A moving picture on "Fertility" was presented by a representative of the Ortho Products Corporation.

KING COUNTY MEDICAL SOCIETY

King County Medical Society held a meeting January 5 in the auditorium of Medical and Dental Building, Seattle, at 8:15 p. m., President Weichbrodt presiding.

Fordyce C. Gorham and Robert A. Tidwell were elected to membership. Applications were received from Mary K. Connolly, Gordon M. Parrott, Donald R. Sparkman and Paul L. Williams.

Reports were read by chairmen of the following committees: Bulletin, Welfare, Grievance, Membership, Public Relations, Medical Speakers, University, Program, Legislative and Economics, City Health, Library, Telephone, Entertainment. Bernard P. Mullen read the report of the Secretary-Treasurer.

William M. O'Shea was introduced as president for 1942. The following officers were elected: President-elect, Frank H. Douglass; secretary-treasurer, Bernard P. Mullen; trustees, Irvin A. Weichbrodt, James H. Berge and Chester A. Regan; delegates to Washington State Medical Association, Irvin A. Weichbrodt, James H. Berge, Roll N. Dillon, Frank H. Wanamaker, Walter B. Seelye, Clark C. Goss, Edwin A. Nixon, Joel W. Baker, C. W. Knudson, Martin

Norgore, Paul R. Rollins, Harold E. Nichols and alternate, John Duncan.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of Pierce County Medical Society was held in the Medical Arts Auditorium, Tacoma, January 13. Minutes of the previous meeting were read and approved.

The scientific program was given by Jesse W. Read on "The Care of Lacerated Tendons of the Hand." The material was presented in the form of a color movie which illustrated the proper care of lacerated tendons of the hand. Tendon stitches were illustrated by animated diagrams. Healing processes were shown with animated drawings and various points on the screen were emphasized by appropriate remarks. Discussion was by Drs. Willard, Herrmann and Gullikson.

A. L. Schultz discussed the physician's part in the Tacoma Home Defense organization.

N. E. Magnussen presented a report from C. G. Trimble concerning the excellent progress that is being made in training civilians through the Red Cross first aid classes.

Clifford Spike reported on the communications division of the Home Defense organization.

Announcement was made concerning the enrollment forms for procurement and assignment service for physicians and the editorial in *The Journal of the A.M.A.* for January 10 was read.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society held a meeting at Walla Walla Jan. 8. E. D. Hoedemaker, neurologist and psychiatrist of Seattle, spoke on the subject "The Psychologic Aspects of Injury in General and to the Head, and the Sequelae and Treatment." Interest was manifested by many questions and a lively discussion entered into by various members of the society.

WOMAN'S AUXILIARY

Chelan County Auxiliary held it first meeting of the year at Wenatchee at the home of the president, Mrs. Norman Bellas. Seventy-four subscriptions to *Hygeia* were reported, thirty-seven of these having been placed in the schools of the community.

Kitsap County Auxiliary, at the first meeting of the new year at Bremerton, heard Mrs. Hannay, chief nutritionist of Washington State Dairy Council, speak on "Nutritional Defense."

Spokane County Auxiliary's first meeting in 1942 was in the nature of a public relations meeting. At an open forum in the afternoon at the Y.W.C.A., Dr. David Glasier spoke on "Social Hygiene" and Dr. Arthur Lein talked on "New Procedures in Public Health and How They Will Affect Us in War Time." An open discussion followed.

Whatcom County Auxiliary had as guests of honor at the January meeting the State President, Mrs. James H. Berge, and Mrs. Irvin Weichbrodt. Mrs. Berge urged members to become active in defense work and Mrs. Weichbrodt spoke on the value of the National Bulletin.

THE BULLETIN OF THE WOMAN'S AUXILIARY

This is a year of most constructive work for each and every one. The membership of our Woman's Auxiliary is approximately 30,000, a force strong enough to wage a major campaign in health defense if properly organized and conducted.

The Bulletin of the Woman's Auxiliary is the organ by means of which the battle of health defense is directed. It is the official publication of the Auxiliary and contains the policies and plans pertaining to the work of our organization. We earnestly urge all members to read each issue of *The Bulletin* carefully and with understanding.

Since the publication of the fall issue war has come to us. The American Medical Association has pledged its loyal support and has offered its services to the government. The Woman's Auxiliary is proud to stand by the side of the Association in this hour of crisis.

As each doctor depends upon *The Journal of the American Medical Association* for information concerning the best means of serving his country, so must each member of the Auxiliary read *The Bulletin* to learn of the work of health defense which is her responsibility to promote.

Keep abreast of the times. Support your organization. Read your national Bulletin. Be well trained and alert members, serving your country in health defense.

Mrs. Irvin A. Weichbrodt,
State Chairman of
Bulletin Circulation.

CLINICAL FORUM

OBSTETRIC PROBLEM

A white woman, aged 39 years, was admitted to the obstetric department of the hospital at 1:20 a. m. October 23, 1941, complaining of severe epigastric pain of several hours duration. The pain radiated around left side of back. Patient seen sitting up in bed and exhibiting marked restlessness. She stated that she was 8½ months pregnant and, on questioning, had not seen a physician but had examined her own urine (by noting the color).

This was her second pregnancy. The first, ten years previously, had terminated in eclampsia with fourteen convulsions. Cesarean section had been done and a viable child delivered. No more history was obtained, due to patient's highly irritable state.

Physical examination revealed a 39 year old female, approximate weight 160 pounds. No notable abnormalities found other than approximately a 7½ months size uterus, exaggerated reflexes, and B. P. of 206/112. No definite tissue or dependent edema noted except for an apparent fullness of the tissues of the face. Skin dry.

Course in Hospital:

Patient vomited shortly after admittance.
1:35 a.m.—Hypo ¼ morphine sulphate.
2:40—Repeated ¼ M. S.
2:30—B.P. 160/116.
4:25—Convulsion while patient was asleep which was of short duration.
5:15—Awake and dizzy; 200 cc. urine obtained per catheter, dark amber, hazy, Sp. G. 1025, pH 7, albumin plus, amorphous-phosphates.
6:00—Drams i.j. $MgSO_4$ (orally).
6:05—Severe convulsion, lasting 4 minutes.
6:40—Sod. luminal gr. jv. i.v.
7:00—50 cc. of 60 per cent glucose i.v. Sleeping soundly. B.P. 170/125. Convulsion, lasting 2 minutes.
9:00—Convulsion, lasting 3 minutes. 50 per cent glucose

(*Continued on Page* 74)

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, SEPT. 16-19, 1942

MEDICAL NOTES

Hospital Site Proposed. Governor Chase Clark of Idaho has asked the war department to consider Lava Hot Springs as the site for a proposed intermountain army hospital. This request, which has received strong support throughout Idaho, follows report that the United States Army plans a one thousand bed hospital in the intermountain territory, well away from all military objectives. It is expected that several million dollars will be expended in construction. Lava Hot Springs has excellent rail and highway transportation and is sufficiently well isolated to meet the Army requirements.

J. F. Dinsmore, who has been in practice at Nez Perce, has moved to Canby, Oregon.

Dale H. Davis, formerly of U. S. Public Health service, is now associated with Alfred Budge of Boise.

OBITUARY

Dr. J. R. Young of Pocatello died in October, 1941.

SOCIETY MEETINGS

SOUTHSIDE MEDICAL SOCIETY

Southside Medical Society held its annual meeting at Twin Falls, January 22. The banquet included members of the Woman's Auxiliary as guests.

The program included entertainment by Mr. R. K. Dillingham, well known magician; movies of deep sea fishing by Harry Heller of Filer; report on civilian defense by Dr. Passer.

The following officers were elected for the ensuing year: president, George C. Halley; vice-president, J. H. Murphy; secretary, H. L. Stowe, all of Twin Falls.

C. B. Meyer, Naval Reserve, has been called into active service, stationed at San Diego.

POSTGRADUATE COURSES

Postgraduate courses will be given during the month of April, in which the speakers will be furnished by the State Department of Health. They will tour the state and speak before each component society. The speakers have not been chosen yet. All information will be given as soon as available.

CLINICAL FORUM

(*Continued from Page 73*)

i.v. OH_1 and sod. luminal i.v. prn.

9:20—FHT good, 140, regular.

9:45—Vaginal preparation and pelvic exam. Cervix thick, rather firm, 2½ fingers dilation. Vertex presentation. Membranes were ruptured.

10:00—Fifth convulsion, lasting 3 minutes.

10:30—paraldehyde drams iij given per rectum.

11:30—750 cc. 5 per cent glucose in N/s started as i.v.

12:00 noon—Contractions every 3 minutes, severe.

12:30 p.m.—10 cc. 25 per cent $MgSO_4$ i.m.

2:10 p.m.—Good pains every 3 to 5 minutes with strong contractions. Presenting vertex high.

3:25—B.P. 160/112. 75 cc. urine per catheter. $MgSO_4$ per levine tube drams i.j. OH_2.

6:12—Sixth convulsion.

7:00—T99 P 112 R16. Uterine contractions irregular. FHT strong, regular. Patient unconscious.

10:23—Slight convulsion.

11:30—5 cc. urine per catheter.

1:30 a.m.—October 24. No convulsions since 8:00 p.m. Mod. amount bloody show. T 100. 2 P124 R 14. B.P. 130/88. Uterine contractions weak and irregular, 4 to 7 minutes.

3:00—2-4-6 enema given. Large amount of soft stool one hour later.

4:00—Slightly restless. Paraldehyde drams i.j.

6:00—Respiration stertorous. i.v. 10 per cent glucose in N/S 700 cc.

6:45—20 cc. urine per catheter. Dk. amber, hazy, casts: Granular casts 2 plus, casts waxy 1 plus, RBC 4 plus, Sp.G. 1018. Albumin 4 plus, pH 6.

7:15—Upper abdomen distending. FMT 140, strong and regular.

8:45—Gastric lavage returned with large amount of dark green liquid.

9:55—Pituitrin m iij every 30 minutes started.

10:30—Contractions every 3 to 5 minutes. Pituitrin discontinued.

11:00—FHT irregular, 100-140. Contractions every 2 minutes. Bright bloody discharge. B.P. 126/80. Hypodermoclysis started.

12:15 p.m.—The patient is in deep coma; respiration more labored, 12 per minute. Pulse 120.

1:30—Contractions irregular. FHT weaker, more irregular. 3½ fingers dilation.

The condition of both mother and child are becoming serious if not desperate. How would you have conducted this case? If called in consultation at this point, what would you advise? If you were alone in an outlying district what would you do?

COMMENTS ON PEDIATRIC PROBLEM IN JANUARY ISSUE

First commentator offers the following:

My diagnosis of this problem would be extreme dehydration. These little fellows are sometimes tumbled from their highway of excellent progress and development by an upper respiratory infection, as here suggested by "mucopus—in pharynx." It may be of such low grade that the average observant mother is caught off her guard. She explains his "off feed" by the seedy and unscientific observation, "he is teething." He doesn't appear very sick, and his downward course is most marked by its insidiousness. Suddenly the mother is conscious of his having lost much weight and his restitution to normal has passed beyond her control. She seeks advice.

He must be hospitalized at once. A blood transfusion will provide food and fluids. For slow but positive absorption, glucose and normal saline should be given subcutaneously almost continuously. If he still refuses fluids by mouth, they should be given through a nasal tube until he is able and willing to receive them by mouth; then carefully adjust a formula to his needs and according to his ability to digest.

Second commentator has these views:

To me this case is very difficult to discuss. At a time when this child should have weighed 17½ pounds, he is brought into an office, after one week's illness, weighing 14 pounds 6 ounces, in a state of extreme dehydration and with a *moist* tongue.

Certainly the physician who saw this child availed himself of some history of his performance during the week of his illness and this, of course, will point the road. It is not scurvy or congenital dilatation of the ureters and the kidney pelvis with superimposed infection; it is not appendicitis; it is not syphilis and tuberculous meningitis, beri beri or peritonitis. Treatment must be based on the diagnosis which, from the facts provided, I can not make.

Continued doses of sodium bicarbonate, producing an accute enteritis or an accute bacillary dysentery, might have produced the dehydration and listlessness manifest in the child. In the case of the sodium bicarbonate enteritis he certainly would have had a willingness to take water by mouth, which this child did not. Late in severe dysentery he might have been as dry as this, but in neither case would there be a moist tongue.

In a child seven months of age with no teeth above and two below, an overwhelming infection of the mouth, gums, tongue, lips and tonsils, though unlikely with its extreme local irritation, might keep up a flow of saliva enough to moisten the tongue even with extreme dehydration, but it shouuld not give a full abdomen. Mercurial poisoning, too, might possibly do this.

An open safety pin or other foreign body lodged in the lower pharynx might produce enough local irritation to keep up a flow of saliva, while the attendant vomiting and refusal to take food or fluid provoked an extreme dehydration, but the child should have an empty or flat belly.

A teaspoon of lysol, given a week ago, might result in the dehydration and possibly a moist tongue, but it would certainly have left a reddened throat and plenty of lung findings. He is too dry for accute iodine poisoning. Caustic alkali is a possibility.

If the baby is to stay alive many hours, he must have his fluid restored. Five per cent glucose in Hartman's solution, Ringer's solution or saline should be given at once.

Conclusion of Case:

The baby was hospitalized and fluids given by hypodermoclysis and nasal tube. Two days later temperature rose to 103° and coarse rales appeared in his chest. The following day a severe diahrrhea had developed with abdominal distension; and the next, his third day, a double otitis media was discovered which was relieved by lancing. One ear discharged profusely for fifteen days. Earliest urine specimen showed no albumin, 1-plus sugar, 2-plus pus. At a time when the temperature was 104.4°, blood picture was Hb. 68 per cent; r.b.c. 3,840,000; w.b.c. 14,200; polys 68 per cent. In addition to the above fluid care, he was given sulfadiazine for about a week with seemingly no effect; then sulfathiazole was substituted with a definite change for the better in two days and continued satisfactory progress, leaving the hospital on his twenty-eighth day.

BOOK REVIEWS

GYNECOLOGY AND FEMALE ENDOCRINOLOGY. By Emil Novak, A.B., M.D., D.Sc. (Hon. Dublin), F.A.C.S., Associate in Gynecology, The Johns Hopkins Medical School, etc. 605 pp., $10. Little, Brown & Co., Boston, 1941.

The rapid progress of fact finding in female endocrinology and pathology is such that every few years there arises a need for an authoritative source to standardize gynecologic practice. This new book by an eminent student of gynecologic pathology and physiology admirably fulfills this need for specialists and general practitioners alike. The volume includes all and more of the pathologic material presented in the book "Gynecological Pathology" by the same author. In addition one is impressed with the sound, up-to-date, clear cut exposition of the principles of female physiology and endocrinology. Therapeutic procedures are minimized, specific, concise and closely correlated with principles of physiology and pathology.

Much credit is due to the author and publisher for the many excellent illustrations. Gross and microscopic illustrations of the newer ovarian tumors are particularly valuable. The text is surprisingly clear and concise, subject matter sound, logical and interesting to read.

There are no operative procedures nor technic included, it being the opinion of the author that surgical gynecology is a special branch which, to avoid confusion, should be considered apart from the fundamentals of gynecology. The ultimate value of any text book depends upon its ability to supply answers to questions arising in connection with problems met by students, busy practitioners and specialists. This reviewer has seen no gynecologic text book which so well fulfills this requirement. C. D. KIMBALL

SYNOPSIS OF GENITOURINARY DISEASES. By Austin I. Dodson, M.D., F.A.C.S., Professor of Genitourinary Surgery, Medical College of Virginia, etc. Third Edition. With 112 Illustrations. 302 pp., $3.50. The C. V. Mosby Co., St. Louis, 1941.

Literature of urology has become so expansive that a concise synopsis is of value. Believing that time devoted to etiology and diagnostic methods is of special value, the author has aimed in this volume to present these recognized principles in the practice of urology. Its fourteen chapters cover the main features of diseases encountered by the average practitioner. Limited space is devoted to etiology, symptoms and diagnosis, and treatment is specific, with suggestions of known value. The book has many original pen and ink drawings which clearly amplify the text.

PREECLAMPTIC AND ECLAMPTIC TOXEMIA OF PREGNANCY. By Lewis Dexter, A.B., M.D., Research Fellow in Medicine, Harvard Medical School and Soma Weiss, A.B., M.D., Hersey Professor of the Theory and Practice of Physic, Harvard University, etc. 411 pp., $5. Little, Brown & Co., Boston, 1941.

Much work has been published in the last few years, attempting to clarify the cause, effect and treatment of the toxemias of pregnancy. This monograph is a report of facts obtained in an investigation of preeclamptic and eclamptic toxemias of pregnancy by two internists. The authors show that the manifestations and consequences of the disease are of as much interest to the internist as to obstetrician. Toxemia of pregnancy has been attacked from every angle, including generalized edemas of normal pregnancy. Clinical observations as well as theories are discussed. A considerable portion of the book deals with the pressor fraction of the pituitary gland and the chapter on treatment is indeed enlightening and concisely written. The entire book will help to standardize the thoughts of the medical profession in regard to toxemias of pregnancy and will undoubtedly clarify the most effective modern treatment of this dread disease.

R. P. Smith

Eye Hazards in Industry. Extent, Cause and Means of Prevention. By Louis Resnick. 321 pp., $3.50. Columbia University Press, New York, 1941.

This book furnishes information essential to economic conducting of all industrial enterprises where labor is a considerable factor. In a readable way the importance of prevention of eye injuries is emphasized by citing the tremendous number of working hours lost and a corresponding monetary cost. A feature which deserves special mention is the emphasis laid on rating of vision, corrected and uncorrected, at the time of employment, followed by periodic examinations. Results of such a method, carried out most fully among employees of the Pullman Company, have worked out so well that any employer ought to give serious thought to following the suggestions made, if from no other standpoint than financial gain.

There is also a wealth of information covering statistics, preventive measures, including lighting and classification of employees for increasing the results of output in hours of labor. Included is a summary of ordinary eye diseases encountered in industrial work together with an exhaustive list of industrial poisonings hazardous to eyes. To all physicians, employers and employees it is a book well worth reading.

W. O. Bell

Symptoms in Diagnosis. By Jonathan Campbell Meakins, M.D., LL.D., Professor of Medicine and Director of the Department of Medicine, McGill University, etc. Illustrated. 323 pp., $4. Little, Brown & Co., Boston, 1941.

The significance of this volume is clearly evident, the importance of symptoms being paramount in diagnosis. The author states it should be our endeavor "sympathetically to encourage the patient to express his feelings in simple language, unadorned by preconceived diagnostic impressions gleaned over the back fence, around the tea table, at a church social or a cocktail party." Symptomatology may be defeated by erroneous preconceived conclusions. One of the most absorbing chapters deals with disturbances of sensation. Most patients consult the physician on account of pain. Ability to locate its source indicates the practitioner's diagnostic acumen. The chapters on symptoms of localizing value contain many useful suggestions that should be the property of every practitioner. These are a few of the interesting features of this volume.

From Cretin to Genius. By Dr. Serge Voronoff. 281 pp., $2.75. Alliance Book Corporation, New York, 1941.

This volume, overstepping the import of its title, discusses numerous phases of many topics. Only two of the twenty chapters deal with relation of the thyroid function to superintelligence or genius, and these are notable for their lack of a clear and concise presentation of the influence exerted by the thyroid.

The major portion of the book discusses exhibitions of genius or superintelligence, speculating on a fortuitous disposition of chromosomes as the cause of such intelligence, explaining and deploring the fact that genius has so often failed to be recognized by contemporary savants. The whole presentation lacks unity and continuity. However, it marshals a multitude of facts and observations that are thought provoking.

C. F. Davidson

The Blood Bank and the Technique and Therapeutics of Transfusions. By Robert A. Kilduffe, A.B., A.M., M.D., F.A.S.C.P., Director, Laboratories, Atlantic City Hospital, City Bacteriologist, Atlantic City, etc., and Michael DeBakey, B.S., M.D., M.S., F.A.C.S., Assistant Professor of Surgery, School of Medicine, Tulane University of Louisiana, etc. With 214 illustrations and 1 color plate. 558 pp. $7.50. The C. V. Moshy Company, St. Louis, 1942.

The title of this volume may be misleading to some who would likely be interested in it, because the material herein covers not only blood transfusions and the blood bank, but includes in every detail the handling of plasma in connection with the blood bank. Much of the volume is devoted to plasma. There is discussion of almost every technical procedure conceivable from withdrawing and typing of blood through the storage and administration of whole blood and handling of plasma. There is also discussion of the general principles underlying the use of each. It should be of great value, therefore, not only to technicians but to those physicians concerned in any way with the handling of blood or plasma. Today, there is a wide choice of methods in connection with these problems. This book takes up most of them in detail, and illustrations are welcomely profuse. Although methods for the preparation and handling of plasma are of recent development, and details are continually changing, the underlying principles are dealt with so well here that this volume will not soon become antiquated.

C. R. Jensen.

Medical Diseases of War. By Sir Arthur Hurst, M.A., D.M., Oxon., F.R.C.P., Lieutenant-Colonel, Late R.A.M.C.; Lecturer on Clinical Medicine, University of Oxford, etc. 427 pp., $5.50. The Williams & Wilkins Co., Baltimore, 1941.

From the contents of this volume one concludes that a large proportion of medical diseases of war results in various forms of hysteria among the soldiers. Ten chapters deal with hysterical manifestations, separate chapters being devoted to hysterical paralysis, contractures, postures, tremor, fits, disorders of speech, hearing, vision. Anxiety neuroses constitute a prominent feature of war results. It seems that war nephritis constitutes a special form of kidney disease aggravated by exposure to cold, wet and privations.

X-RAY DIAGNOSIS
and
THERAPY

H. E. NICHOLS, M.D.
Seattle, Wash.
443 Stimson Bldg. ELiot 7064

NORTHWEST MEDICINE

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

THIS IS TOTAL WAR

Much criticism has been expressed over the complacency with which the majority of our citizens seem to view the greatest war in history, in which the United States is preparing to become a supreme factor. The fact that our coasts have not been invaded nor our cities bombed has afforded a false sense of security. Once let the enemy invade our land and commit ravages such as have been inflicted upon the cities and peoples of conquered countries, and this indifference would be dispelled by wild activity.

Nevertheless, our government is promoting as rapidly as possible a gigantic preparation for defense as well as offense, in which we must participate if the enemy is to be conquered and the war won. The real presence of warfare has been emphasized by the recent registration of all male citizens between the ages of 20 and 45. This includes thousands of physicians who are liable for military service, and those who do not hold commissions are subject to induction under the Selective Service Act.

Enrollment under the Procurement and Assignment Service has been requested on the part of all physicians in these ages. According to his professional training and experience, each physician will be certified for a position commensurate with his professional training and experience. While some will be assigned to Army and Navy appointments, there will also be a need for service in civilian, hospital and medical defense assignments.

We should also remember that later there will very likely be a call for the service of physicians beyond the 45 year limit. While the maximal age for appointment in the Army is 55 years, that in the Navy reserve is 50 years, it is stated that only the physically disabled will be subject to deferment, and even these may be utilized in some government line of work. The medical profession has never yet failed in any duty which has been assigned to it, and in this tremendous world cataclysm in which we are engaged it is certain they will meet any demand which is made upon them.

WAR CONTRIBUTION BY THE MEDICAL PROFESSION

Physicians of this country are acutely aware of the part which they are contributing toward war preparations. As a rule the public has little, if any, knowledge of these activities, since they are conducted outside the realm of public observation. While it is uncommon for lay publications to pay attention to these professional activities, it is a real satisfaction to note a comment on them when appearing in a commercial publication. The following is taken from the *Seattle Daily Journal of Commerce,* January 9, and indicates the attention of its editor to medical endeavors to promote the welfare of our citizen soldiery.

> "Since the passage of the selective service act, some 6444 medical boards have been established in this country. They have claimed the services of more than 25,000 physicians and 6000 dentists. These men have examined upwards of 2,000,000 selectees, and they have not received one penny of remuneration. If the examinations were appraised at $5 each, this would amount to an outright donation of $10,000,000 by the medical profession to the cause of national defense. And that contribution has been made at a time when most groups are looking for new ways to tap the federal treasury.
>
> "This nation's goal is not merely to create and train a big army. An army which will be physically and mentally superior is being created. The doctors who have given their services so freely to the nation are doing much to bring that about. The examinations of those selected are complete and searching. In thousands of instances they have been the means of determining disabilities that the men did not know they had, and starting them on curative programs. And after a man is taken into the army, he is given further examinations and tests by the army medical corps, which is largely made up of reserve medical officers who have been called into service from private life.
>
> "This is the healthiest army we have ever had. The physical requirements are unprecedently high, far higher, for instance, than those prevailing in Europe. The doctor plays an important part in the program to make the country invincible."

BAN ON ILLICIT NARCOTICS

One interesting effect of the war in the Pacific comes to light in its influence on the illicit traffic in narcotics. It now appears that one of Japan's contributions to modern civilization was the provision of large amounts of drugs to be smuggled into the United States. This source of supply is now cut off, leaving only minor points in Burma and India, with which there is also little contact due to restrictions on shipping from these areas. Addicts and peddlers, therefore, are deprived of their usual stocks and must look elsewhere for relief.

That they are turning on the medical profession is evidenced by the increasing number of thefts of physicians' bags and the reports of increasing visits to doctors' offices. The medical profession constitutes the only readily accessible supply of morphine and other narcotics. There is no doubt that addicts will continue to annoy physicians and will continue to steal bags or other equipment which might contain supplies of drugs.

Any physician who carries morphine or other narcotic should make arrangement to store it in a small pocket kit and should make sure that no supply of the drug is left in an easily discovered place in the office. If it were widely known that all narcotics had been removed from physicians' bags, the theft of these articles by addicts would soon cease. Also if it were widely known that no physician would ever provide drugs for addicts, the annoyance of various types of pressure on the medical profession would soon be a thing of the past. Unfortunately a few weaklings, unable to make a success of the practice of medicine, may occasionally succumb to the wheedlings of the hop head. Such gentry will soon find themselves on the way to the penitentiaries, sent there by narcotic agents who now have more time to spend on this phase of the narcotic problem.

DISCRETION IN ADMINISTRATION OF VITAMINS

In no line of human nutrition has more attention been paid in recent years than to the administration of vitamins. The public has become vitamin-conscious through scientific and popular publications concerning the importance of these factors and their function in maintenance of health and promotion of growth. Substantial facts have been exaggerated through exploitation on the part of certain financial interests which have undoubtedly unduly magnified the role of these elements in human economy. Not only has much been published concerning restoration of health by proper administration of vitamins, but their employment has been advocated for individuals in health in order to maintain a normal state. The indiscriminate administration of vitamins to industrial employes has resulted in such a controversy that the Council on Foods and Nutrition and the Council on Industrial Health of the American Medical Association were requested to make a study of vitamins and present an authoritative report concerning their true dietary function and proper administration.

The report of these Councils[1] should serve to establish the role of these preparations in industry, as well as their usefulness in maintaining and promoting normal nutrition. Here is presented a discussion of dietary deficiencies and their amelioration by adequate nutrition. It has long been an established fact that this condition can be maintained by a suitable dietary, and the necessary elements are contained in food available to all mankind.

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[1] Indiscriminate Administration of Vitamins to Workers in Industry. J.A.M.A. 118:618-621. Feb. 21, 1942.

The introduction of vitamins to accomplish this result has presented a new field for maintaining normal nutrition. These matters are thoroughly discussed in this report, with special reference to the alleged necessity of introduction of vitamins in industrial fields. After a thorough discussion of mass administration of vitamins, the report ends with the following conclusions which are worthy of careful consideration:

> "In view of the foregoing discussion, the Council on Foods and Nutrition and the Council on Industrial Health conclude that satisfactory evidence of the wisdom of the general practice of industrial concerns providing all of their employes with vitamins indiscriminately is lacking; the Councils cannot give their support to the program of which this is the objective. When a satisfactory study of any given industrial situation indicates the wisdom of providing vitamins to employees, the Councils wish to point out the necessity for observing the proper scientific limitations of such action to the situation in question; after the employee has been restored to a good nutritive state, the use of a good diet of natural protective foods thereafter should then suffice. Nothing in this report is intended to belittle the significance of vitamins in nutrition, or the value of the proper use of added vitamins in improving staple foods such as bread and flour. What is being emphasized is the need for avoidance of indiscriminate mass use of vitamins, a practice which supports the commercial exploitation rather than scientific rational use of these important dietary factors."

DESIRABILITY OF ACQUIRING SPANISH

Perhaps the most effective means of uniting people is a common language. This has been always a chief factor in the strength of our United States. Different sections of our country have like aims and ambitions, promoted by one form of speech. In contrast, the age-long jealousies and conflicts of European nations can largely be traced to the misunderstandings of diverse languages. One naturally views with contempt and suspicion one who cannot understand the spoken word. We can attribute our friendly and sympathetic relations with England and her dominions largely to this uniformity of speech.

Considering the southern portion of this continent, one notes a similar bond of union, since aside from Brazil all nations speak the same Spanish language. This constitutes a bond of union for these nations, from which English speaking nations are largely excluded. Undoubtedly this has been one reason for our Southern American neighbors cultivating a suspicion of the "octopus of the North," since friendly intercourse has not been available. Representatives of Germany and Italy, however, have appreciated the situation and are reported, in their relations with the peoples of the southern hemisphere, to have cultivated their language and familiarized themselves with their customs which the North American representatives have neglected.

In view of President Roosevelt's persistent advocacy of the good neighbor policy, it would seem incumbent upon us to cultivate our neighbors through the acquisition of their language. The ambition to develop controlling commercial relations will depend to a large extent upon the language approach. If these friendly relations are suitably cultivated, there will undoubtedly in future years be developed a closer relationship among the members of the medical fraternity in the North and South Americas.

During recent years medical visitors to the great South American cities have been astonished to discover the medical and surgical attainments of professional brethren in those nations. While their advanced medical knowledge has been acquired chiefly in Germany and England, they have developed their own scientific attainments, of which we have been largely ignorant. These advances have appeared in books and medical journals which have reached the profession of our country from the cities of Argentina, Brazil, Cuba and Mexico. By perusing these publications one discovers that medical men of ability are carrying on in those nations with discoveries of benefit to the whole medical profession, but which are largely unknown through unfamiliarity with the Spanish language. Hence, it is timely to appeal for cultivation of Spanish which might well be taught in our schools with the objective of bringing us closer to our southern neighbors. Termination of this war may very likely result in closer relations with South American republics, the benefit of which may depend upon our ability to meet them on a common language basis.

CONGRESS ON OBSTETRICS AND GYNECOLOGY

The second American Congress on Obstetrics and Gynecology will be held in St. Louis, April 6-10. Leading gynecologists, obstetricians, nurses, hospital administrators, public health officials and medical educators will participate in the program. The purpose of the Congress is to present a program of our present day medical, nursing and health problems from a scientific, practical, educational and economic viewpoint so far as they relate to human reproduction and neonatal care.

CORRESPONDENCE

THE WASSERMANN TEST AND BOEING AIRCRAFT COMPANY

Seattle, Wash., Feb. 19, 1942.

To the Editor:

It is evident that the editorial appearing in the February issue of Northwest Medicine concerning the preemployment qualifications of applicants for Boeing Aircraft Company was inspired by apparent lack of information. Three points were specifically mentioned in the article which demand explanation. These were: (1) the management of Boeing Aircraft Company has meddled in the field of medicine; (2) the Boeing Aircraft Company has failed or refused to cooperate with public health agencies, and (3) the company has failed to consider the problems concerning false or fixed positive serologic tests. The following discussion should help to straighten out this misunderstanding.

Maximum efficiency to obtain quality production is the chief principle of American industry during this period of crisis, and the management of Boeing Aircraft Company has been alert to remove any obstacle to the operation of this principle. With the goal in mind that economic losses of manpower could be better controlled by a complete medical program, they established a medical department and placed no restraint on the extent of its work.

Any policy adopted by an industry with regard to its employees must be completely understood and accepted by the various groups to which it applies. This means any syphilis program adopted by Boeing Aircraft Company must meet with the approval of the employees, the company executives, the company medical department, the public health agencies and local physicians.

To acquaint the employees fully with the importance of syphilis would necessitate launching an educational campaign preceding the start of any control program. The company executives would have to adopt a policy of compulsory participation of the employees and establish measures for removing noncooperative syphilitic patients from the job. The company medical department, the public health agencies and local physicians would have to understand the problem, so adequate treatment and control could be effected and maintained.

The above factors have been carefully considered by the medical department with the following conclusions concerning the problem of admitting syphilitic employees into the company. Since Boeing Aircraft Company is a defense industry with a rapidly expanding employment capacity, the volume of work facing the medical department at this time is so large that it is unwise to attempt an educational program or to establish a follow-up department to control syphilis. It would also be unwise at this time for the company executives to adopt any compulsory measures which might cause employees to lose their jobs. Under the existing conditions the company could not provide adequate follow-up facilities to enable public health agencies to institute a control program. The same problems of follow-up apply to local doctors, so there is no way they can help. It is not the intention of our medical department to compete with local physicians, so we have not instituted treatment of syphilis.

The company has endeavored, however, to cooperate with the public health agencies wherever possible. There has been some distribution of circulars pertaining to syphilis to the employees, and there have been under consideration methods of achieving better distribution of the educational pamphlets. We have assisted in supplying any information concerning the applicants found to have syphilis by reporting them to the City Health Department. Each applicant examined by our medical department has a Kahn test run by our laboratory. Applicants found by our examination to have a positive blood are requested to return to the medical department for another check, and this blood specimen is sent to the city laboratories. It is only after we find an applicant to have a positive blood by our examination and the confirmatory city examination that we reject the man.

We are well aware of the fact there are false positives and fixed positives in serologic examinations and that in a very small number of our rejections we may not have been fair. The evaluation of a false or fixed positive, however, would be difficult, and in the absence of an adequate control program would cause considerable controversy between the company and those rejected because of the disease.

I would like to point out that the United States army, navy, coast guard and civil service have restrictions against taking for service men who have positive Wassermann examinations. I mention this not to justify our stand but to point out that the control of syphilis is a highly controversial problem and one which has not been solved even by governmental services.

It is our hope that at some future date the various groups concerned with a syphilis program can be acquainted with the problems and adequate control instituted. It is hardly within the province of the Boeing Company to institute a program which is really in the field of public health.

William E. Russell, M.D.,
Medical Supervisor.

Dr. Russell fails to explain the harm which the management thinks might accrue to the Boeing Aircraft Company, should it hire a person with positive Wassermann and no other cause for rejection. The editorial in question was not, however, directed at Dr. Russell who has done a truly remarkable job in industrial medicine, but was written to draw attention to unwarranted interference in the medical field by an arbitrary and unyielding management—Ed.

THERE IS NO EXCUSE FOR SMALLPOX DEATHS

Carelessness and ignorance are the only two reasons why any one should die from smallpox today, David Dietz, Cleveland, declares in the March issue of *Hygeia, The Health Magazine.* "There is complete and foolproof protection against the disease, a protection as simple as it is dependable," he continues. "It is, as every one knows, vaccination. At the hands of a competent physician, it is 100 per cent safe, and it takes less than five minutes to perform."

ORIGINAL ARTICLES

ACUTE THORACIC INJURIES*

George M. Curtis, M.D.
COLUMBUS, OHIO

During recent years outstanding progress has been made in the field of thoracic surgery. Diagnostic methods have improved. Clearer and more applicable have become the available procedures for the management of empyema, both acute and chronic. The institution of surgical collapse therapy, in the hands of the thoracic surgeon, has definitely added to our success in the management of pulmonary tuberculosis. Thoracoplasty, perhaps the most widely employed of these major surgical procedures, is now performed in surgical clinics throughout the world. With the development of a better understanding of the clinical physiology of the thorax, it has become safer to remove mediastinal tumors of various types. This has been further facilitated by progress in the applications of inhalation anesthesia, as well as by a better understanding of the prevention of anoxemia and the resultant anoxia.

Bronchiectasis, that dread disease, is now coming under surgical control largely through the development of modern lobectomy. This has become a relatively safe procedure in a number of surgical clinics, while in a few the morbidity and mortality rates are astonshingly low. During the past decade it has even become possible successfully to remove the entire lung; thus, pneumonectomy is now being accomplished both for suppurative and malignant pulmonary disease. Consequently, a means is afforded for the control of cancer of the lung, now increasingly more widely recognized.

In clinical researches, incident to the development of these various surgical procedures, much has been learned of thoracic physiology; of the mechanical as well as the cellular requirements of respiration and of the mechanics of disordered cardiac action, together with resultant disturbances of the circulation. It is, therefore, readily understandable that our knowledge of the recognition and management of acute injuries to the chest has likewise made definite progress. Some of these advances are well established, while others are well worth discussing, even though at present they may be in a state of evolution.

CONCUSSION OF THE LUNG

Concussion of the lung, as related to detonation of high explosives, was observed in World War I. However, at that time it was variously regarded as a part of the phenomenon of "shell shock," and was not particularly well understood. It was noted in combatants who fell near an exploding shell but were not actually hit by flying fragments. It was also observed in civilian accidents, in which the individuals were badly shaken, but seemed to have escaped more serious injury. More recently it has been frequently observed during the aerial bombing of London. The British have carefully studied the condition, experimentally as well as clinically, and have applied to it the general term of "blast injury."

Concussion of the lung appears due to the pressure effects of the blast wave which follows the explosion of a high powered projectile, such as a bomb. The explosion results in a high pressure wave which is immediately followed by a compensatory suction wave. Thus, at any point in the immediate neighborhood of an explosion there occurs first a momentary high pressure to be followed at once by a negative pressure.

The pressure wave is highest in the immediate vicinity of the explosion, and decreases rapidly from that point. For example, at a distance of fifteen feet from an exploding 125-pound bomb, the pressure may be as high as 200 pounds, whereas at a distance of fifty feet the maximum pressure recorded will not be more than ten pounds per square inch. The pressure recordings obviously vary with the size and weight of the exploding bomb.

The pulmonary injury following high explosive blast may, in theory, be due to the sudden distention of the lung alveoli by the pressure wave; to the rupture of the alveolar capillaries by the suction wave; or the lung injuries may be directly due to the impact of the pressure wave on the collapsible chest wall. From the recent experimental work of Zukerman, as well as careful clinical studies, it appears that the last named mechanism is responsible for the majority of blast injuries.

Zukerman exposed rabbits to the blast wave of high explosives. The majority of the resultant pulmonary lesions were found localized to the side facing the explosion. When half the animal was protected with sponge rubber, no lesions were observed, if the protected side faced the explosion, but characteristic lesions were observed when the unprotected side faced it. Bilateral lesions were not observed. Thus it appears that the damage is local, rather than a general traumatic effect mediated by pressure through an open trachea.

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*From the Department of Surgery, Ohio State University. Reprinted, by permission, from Diseases of the Chest, Vol. 8, No. 1, pp. 12-16, January, 1942.

*Read before the Sixty-seventh Annual Meeting of Oregon State Medical Society, Portland, Ore., September 2-5, 1941.

The most frequent pathologic findings in blast injuries are ruptured alveoli, ruptured alveolar vessels, and evidence of traumatic suggillating pulmonary hemorrhage. As a rule there are no fractures and no external signs of injury. It has been observed that such findings are commoner in children than in adults. This is probably because of the more elastic nature of the thoracic cage in children, in whom the lungs are more easily compressed between the resilient ribs. Moreover, lesions similar to those observed in blast injuries have been described in civilian injuries where the patient received a heavy blow on the chest, yet examination revealed no external evidence of trauma. Postmortem examination of the lungs in such instances revealed pulmonary lesions identical with those described in blast injuries.

Treatment of blast injuries of the lungs is largely prevention. This is particularly true of injuries due to high explosives. If one is likely to be near an exploding bomb, he should attempt to protect his chest from the resultant high pressure wave. This can be done primarily by entering a bomb shelter, or by taking shelter behind some solid object such as a concrete column, or by throwing oneself into a gutter and thus letting the main effect of the pressure wave pass over the curbstone. If there is insufficient time to do more, one should fall flat on his face, since the heavy back muscles and spine afford greater protection to the lungs than the more compressible anterior chest wall. It may even be feasible in the future to devise some type of armor for the chest. This has been seriously considred.

Treatment after blast injuries consists largely in being acutely aware of the existence and nature of such an injury, of subsequent oxygen therapy, and particularly in rest to avoid any additional trauma that might be superimposed upon the already hemorrhagic lung.

CONTROL OF THORACIC HEMORRHAGE

Injuries which disrupt the continuity of the thoracic wall may be extrathoracic or intrathoracic. The former involves only the chest wall without opening the pleural cavity, while the latter involves the heart, pleura, lung or even the diaphragm. A penetrating wound of the chest is usually intrathoracic. When caused by a shell fragment, a large opening may result. The hemorrhage that will occur as a result of such a wound may be from torn intercostal, internal mammary or even pulmonary vessels.

Hemorrhage from an intercostal vessel may be controlled by packing or identification of the bleeding point, application of a hemostat and subsequent ligature. A bleeding internal mammary artery must be ligated above and below the opening because of the double source of blood supply to these vessels. If the parenchyma of the lung is bleeding, it may usually be controlled by a continuous mattress suture into the lung substance. Accurate identification of a bleeding point in lung parenchyma is time consuming and frequently unnecessary.

If difficulty is experienced in controlling hemorrhage from the lung substance, the lung may be partially exteriorized and sutured under direct vision. This will have the added advantage of fixation of the lung with consequent stabilization of the movable mediastinum.

Following a penetrating wound of the thorax with but a small opening in the chest wall, pneumothorax may develop. The hemorrhage may be from any of the sources just described, or from deep pulmonary vessels of the central zone of the lung or about the hilus. Hemorrhage from the central zone is best controlled by compression of the lung substance.

Since the blood pressure of the pulmonary circulation is but one-sixth that of the systemic, but little actual pulmonary compression is necessary to control this form of hemorrhage. Moreover, the pressure of blood alone in the increasing hemothorax is often insufficient to provide pressure sufficient to control the continuous hemorrhage. The bleeding may not actually stop until the pleural cavity contains two or more liters, while the loss of one and one-half liters of blood will result in unconsciousness in nearly all individuals and death in some.

Morelli, an Italian surgeon in World War I and a pupil of Forlanini, conceived the idea of establishing pneumothorax in such cases in order to compress the bleeding lung and thus control hemorrhage. For pulmonary injuries of this type his method was quite successful, yet, strangely enough, was later abandoned and practically forgotten. Recently Foster has revived the procedure. Further, it has been observed that for some as yet unknown reason blood within the pleural cavity does not clot, and, therefore, can be aspirated and even used for autotransfusion. Meanwhile pneumothorax is established to a degree sufficient to control the hemorrhage.

This method may now be advocated for control of hemorrhage from the central portion of the lung, which has resulted in a hemothorax. It consists of withdrawal of blood from the pleural space through a thoracentesis needle and replacing the blood with air to produce a pneumothorax. The volume of air injected should be at least one-third greater than that of blood withdrawn. This method can be repeated at intervals until a sufficient degree of pneumothorax is established to control the hemorrhage. If indicated, the blood which was withdrawn may be returned to the patient as an autotransfusion.

PNEUMOTHORAX IN THORACIC INJURIES

Several factors make thoracic trauma somewhat different from injuries elsewhere. The negative pressure in the pleural cavities and pericardium must be considered and the symptoms produced by alterations in this pressure should be appreciated. Trauma to the chest may tear the pleura and thus result in partial or complete collapse of the lung on the affected side. Penetrating wounds, such as gunshot, stab and shrapnel wounds, as well as surgical operations, may thus produce an open pneumothorax by injuring the parietal pleura. This results in intrathoracic pressure changes which in a normal chest may rapidly lead to a fatal termination.

In a patient properly prepared for thoracic surgery, the mediastinum has been stabilized, so that an opening into the pleural cavity is of little moment. However, in most instances of war or civilian thoracic injuries, the patient had a previously normal chest, and the consequent disturbance of the pressure relationships is followed by grave effects.

One of the most important factors is the amount of air which enters through the abnormal thoracic opening at each inspiration, and the consequent ability of the individual to compensate for the encroachment on his respiratory surface which is caused by the pneumothorax. Many investigators have stated that the size of the abnormal opening that is compatible with life is in direct relationship to the size of the glottis. If the abnormal opening is appreciably larger than the size of the glottis, the negative pressure relationships will cause the patient to draw more air through the rent in the chest wall than is drawn through the glottis and trachea. Since air drawn directly into the pleural cavity cannot reach the respiratory epithelium, it is of course useless and this will lead to progressive asphyxia. Graham has also drawn attention to the relation of the vital capacity to this phenomenon. If the patient has a high vital capacity, he may often be able to compensate for abnormal openings in the chest wall which are somewhat larger than the glottis.

A factor which reduces the vital capacity in such instances is the variable amount of collapse of the lung on the affected side which follows an open pneumothorax. Another phenomenon which results in reducing the effective oxygenation of the blood in such instances is caused by the violence of inspiration and the comparative slowness with which the air escapes from the trachea during expiration. Some of the air passes from the lung with the intact pleura into the opposite lung, only to reenter the good lung on inspiration, a useless exchange. Brauer called this condition "pendelluft," back and forth pendulumair, and drew attention to the degree to which this useless exchange of air decreased the effective oxygenation of the blood.

Other potentially serious complications in open chest injuries are *tension pneumothorax* and *mediastinal emphysema.* In a tension pneumothorax the tissues surrounding the injured area act as a one way valve, permitting the air to enter the pleural cavity, yet its escape is prevented. This results in pressure collapse of the lung, often to a dangerous degree, pressure on the mediastinum, and even in some cases mediastinal emphysema.

Tissue emphysema is frequently seen when the parietal pleura is torn. This may assume spectacular proportions, but seldom proves fatal. A more serious complication is *mediastinal emphysema.* This may occur after injury to the trachea or a main bronchus. The air may travel extensively through the mediastinal tissues into the neck, and from there may spread in some cases over a large portion of the body surface. The serious aspect of mediastinal emphysema is the pressure effect it exerts on the great vessels of the thorax.

A most dangerous phase of open chest injuries is *mediastinal flutter.* This is dependent upon several of the factors just described and is due primarily to the normal flexibility of the mediastinum. In the presence of an open chest wound, the flexible mediastinum is drawn toward the unopened side on inspiration, and, if expiration is at all violent, as it usually is in such cases, the air escapes so slowly by the trachea that the mediastinum is forced back toward the opened side. Thus, exchange of air in the unopened side is decidedly lessened, and the heart is rather violently tossed back and forth. This latter effect results in the grave complication of interfering with the diastolic filling of the heart. As the heart is swung violently from side to side with each respiration, the vena cava and pulmonary veins are obstructed so frequently that the heart, in effect, actually shuts off a part of its own blood supply.

Mediastinal fiutter if uncorrected leads rather rapidly to a fatal termination. The condition can be prevented by stiffening the mediastinum, as is done preceding planned chest surgery; however, one must recognize and manage the mediastinal flutter which may occur following open injury to a normal chest.

The emergency management of open chest wounds is, first, control the hemorrhage, then reestablish the normal negative pressure relationships of the pleural cavities. This can usually be accomplished temporarily by applying an airtight pack over the open wound. Following this the patient will, as a rule, quickly regain normal respiratory rhythm and can then be transported to an institution prepared to accomplish major thoracic surgery.

Crushing injuries of the chest may occur in civilian life as a result of blows, falls, flying debris, automobile, airplane or railroad accidents; accidents occurring in industrial excavations such as in mines and in crowds subjected to panic as in fires and other disasters. Under war conditions the major crushing injuries result from the caving in of trenches, of bomb shelters or of buildings. These injuries may be grouped as follows:

1. Minor contusions and nonpenetrating wounds of the soft parts.
2. Concussion of the lungs.
3. Injuries involving interference with respiration.
4. Injuries followed by serious hemorrhage.
5. Multiple section fracture of the ribs, the "stove-in-chest."
6. Injuries to the heart and mediastinum.
7. Combined thoracic and abdominal injuries.

The symptoms associated with lesser chest injuries consist chiefly of hemorrhage and interference with normal respiration. Because of the dynamics of the chest, however, these simpler conditions may present serious complications. Their recognition as well as management has been considered. Patients with severe crushing injuries are usually in shock when first seen, and this may even mask the seriousness of the thoracic damage. With recovery from shock, any or all of the aforementioned symptoms may be observed, depending upon the nature of the injury.

Multiple section fractures of the ribs present loss of rigidity of a large portion of the chest wall, with resultant paradoxical respiration and mediastinal flutter in addition to hemorrhage and the more common types of interference with respiration. The initial treatment required is rapid control of the hemorrhage, then stabilization of the chest wall by applying a firm dressing and strapping the chest on the affected side. Oxygen is administered by intranasal catheter, and when the respiratory balance has been regained, the patient may be transported to a hospital equipped for major thoracic surgery.

Combined thoracic and abdominal injuries require, first, emergency treatment of the chest injury. When thoracic hemorrhage has been controlled, respiratory balance has been regained, and the patient has recovered from shock, exploration of the abdominal injury may be indicated. In most instances the abdominal approach is preferable. Through a laparotomy incision the abdominal organs may be adequately explored and wounds of the diaphragm sutured from below. At a later date, if indicated, reconstructive chest surgery may be accomplished.

Injuries to the heart and mediastinal structures are not necessarily immediately fatal. Wounds of the heart, which may be successfully sutured, are usually caused by a knife or ice pick. Elkin recently reported thirty stab wounds of the heart, in which the patients survived long enough to be transported to the hospital where suture was successfully accomplished. The history in these cases is usually characteristic. There are no symptoms for several minutes, but later there ensues exhaustion and loss of consciousness. This sequence of symptoms is due to a gradual tamponade of the heart. At first bleeding may be profuse, but when one to two hundred cubic centimeters of blood have collected in the pericardium, the heart becomes compressed, contractions become weak and the profuse hemorrhage ceases. However, with the rise in intrapericardial pressure, the vena cava can no longer empty normal quantities of blood into the right heart.

Treatment consists of rapid incision into the pericardium to release the cardiac compression, followed by suture of the heart wound. Gunshot wounds of the heart are more likely to prove fatal before the patient can be transported to a properly equipped hospital, but the same principles of diagnosis and treatment are applicable.

Attention is now being drawn, particularly in England, to the frequency of nonpenetrating wounds of the heart. Contusion of the heart may occur in any severe compression of the midportion of the anterior chest wall. The most common causes of this injury are "steering wheel accidents," mine cave-ins and bomb blasts. The immediate cause of the injury is the forceful impact of the lower portions of the sternum against the heart, resulting in contusion of the myocardium.

Initial symptoms in patients who survive the immediate effect of such trauma of the heart are transient collapse, precordial pain, dyspnea and palpitation. A symptom-free period often follows, in which the patient feels well and is even able to exercise normally. Physical signs include an increase in the area of cardiac dullness due to pericardial effusion, weakness and muffling of the heart sounds, abnormalities in rhythm and a persistent tachycardia with a normal temperature.

Treatment is extended rest in bed along with symptomatic and supportive management. Early diagnosis and adequate rest are essential to prevent cardiac rupture during the symptom-free period in many patients who have sustained a severe contusion of the heart.

AMERICAN COLLEGE OF SURGEONS

It has been the custom for the American College of Surgeons to hold several three-day Sectional Meetings each year, with a program covering a variety of surgical subjects based on the plan that is followed for the Clinical Congress. At a meeting held on January 18, the Regents voted unanimously that the College change the plan for Sectional Meetings, and this year sponsor a series of 25 one-day meetings in the United States, with a program for each meeting that will concentrate on medicine and surgery in military service and in civilian defense.

It is proposed to include primarily discussion of enlistment of medical personnel in the United States Army and Navy, and to disseminate information as to service by members of the medical profession in combat zones and in civilian defense. Through these meetings the American College of Surgeons is extremely anxious to bring to the medical profession the latest and most authentic scientific information on war medicine and surgery, particularly in respect to injuries and conditions incident to military service, such as shock, treatment of open wounds, burns, and fractures. This scientific program which is being arranged at the College office in Chicago, will be presented by outstanding authorities.

The fourth series of meetings will include a meeting in Portland, April 13, at Multnomah Hotel, to include Oregon, Washington and Montana.

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HYSTEROSALPINGOGRAPHY*

MARTIN S. SICHEL, M.D.

PORTLAND, OREGON

Visualization of the uterus and fallopian tubes by means of injection of iodized oil is a valuable adjunct in the diagnosis and treatment of obscure pelvic disorders. It is of particular diagnostic value in those patients suffering from persistent pelvic pain and distress, with or without menstrual changes, in which the vaginal examination fails to reveal any definite findings to explain their symptoms. It is of value in determining the presence of intrauterine fibromyomata, polypi and carcinoma of the uterus. It is particularly valuable in visualization of the various development defects of the uterus.

The technic of injection of iodized oil is relatively simple, requires no anesthesia and necessitates only a few instruments. The patient is placed in the lithotomy position and the cervix exposed with a bivalve speculum. Five per cent mercurochrome is applied to the vaginal vault, portio vaginalis of the cervix and cervical canal. After determining the position of the uterus, the anterior lip of the cervix is grasped with a tenaculum and the patency of the cervical canal and internal os determined.

This step is absolutely essential, for failures in injection of the oil into the uterine cavity will occur, if the internal os of the cervix is not patent. During this step in the procedure extra precautions must be taken in those patients having a retroverted and retroflexed uterus. A canula with a rubber tip approximately three-quarters inch from its distal extremity is then inserted into the cervical canal, and by means of a glass syringe attached to the canula approximately 6 to 8 cc. of iodized oil is injected. If the oviducts are patent the patient will usually experience considerable bilateral lower abdominal cramplike pain as the oil enters the tubes. At this time the roentgenogram is taken, the canula withdrawn and the remaining instruments removed by use of cotton sponges. The patient remains in the lithotomy position and ten minutes later a second roentgenogram is taken. If there is any question as to the patency of the tubes following examination of the negatives, a third picture is taken twenty-four hours later.

The accompanying illustrations demonstrate some of the various types of opaque shadows encountered, following injection of iodized oil into the uterus and tubes. Figure 1 illustrates the findings in a normal hysterosalpingogram. A well defined outline of the uterus may be seen with both tubes freely patent and the oil entering the peritoneal cavity through the fimbriated extremities. Figures 2 and 3 reveal some of the various positions of the uterus encountered, both hysterosalpingograms exhibiting normal patent tubes.

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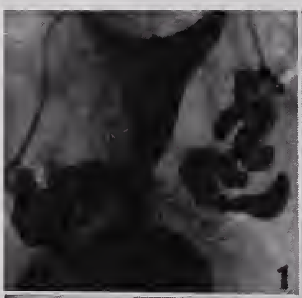
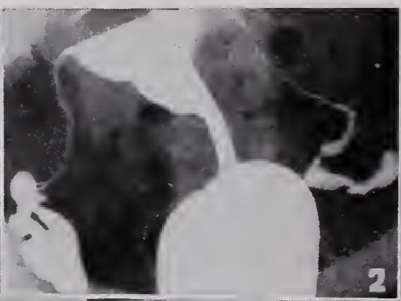
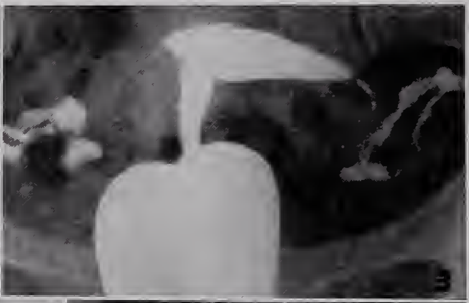
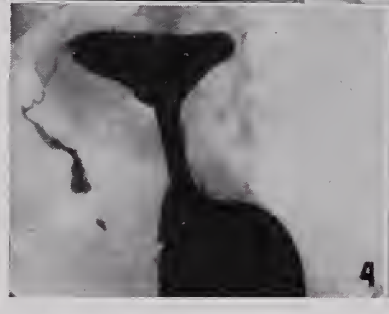
*Read before a meeting of Multnomah County Medical Society, Portland, Ore., Dec. 3, 1941.

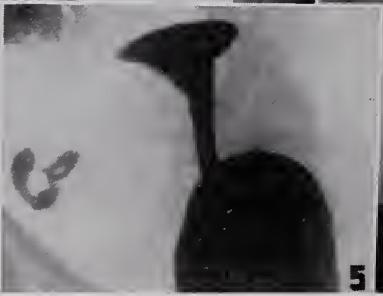
Many variations from the normal are often encountered following injection of iodized oil into the uterus and tubes. Figures 4 and 5 both reveal one occluded tube at the cornual extremity. Some of the most interesting opaque shadows found following a hysterosalpingogram are the various developmental anomalies of the uterus and tubes. Figure 6 exemplifies a bicornuate uterus with two distinct horns. Recurrent pelvic inflammatory disease of gonorrheal origin is often responsible for occlusion of both tubes at their cornual extremity or development of a unilateral or bilateral hydrosalpinx. Figure 7 demonstrates both tubes occluded at their cornual extremities.











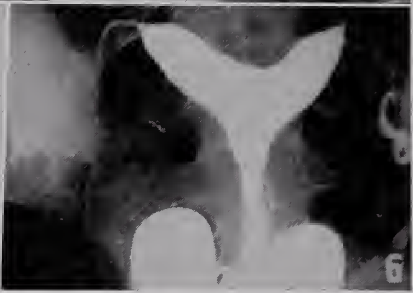


Fig. 1. Hysterosalpingogram showing normal outline of uterus and both tubes with oil freely entering peritoneal cavity through fimbriated extremities.

Figs. 2 and 3. Hysterosalpingograms illustrating some of the various positions of the uterus encountered. Both tubes freely patent with oil escaping into peritoneal cavity.

Fig. 4. Right tube patent, left tube occluded at cornual extremity. Note blunting of uterine cornua near site of occlusion of left tube.

Fig. 5. Right tube patent; left tube occluded at cornual extremity.

Fig. 6. Bicornuate uterus showing two distinct horns. Both fallopian tubes patent.

CASE REPORTS

Case 1. Mrs. J. R., age 25 years, in the early months of her marriage in 1937 inadvertently subjected herself to an abortion, subsequently resulting in a mild postabortal inflammatory disease.

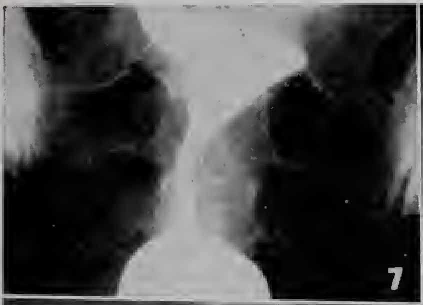
Upon first consulting me in November, 1938, for secondary sterility, the pelvic examination did not reveal any palpable enlargement of either fallopian tube or other pelvic abnormalities. A hysterosalpingogram performed on November 3 (fig. 8) revealed the uterus to fill well and to have smooth and regular outlines; however, no dye was seen to enter either fallopian tube. In view of the negative pelvic findings it was decided to administer biweekly Elliot heat treatments in the hope of absorbing the existing inflammatory reaction. These treatments were accordingly given from November, 1938, to March 20, 1939.

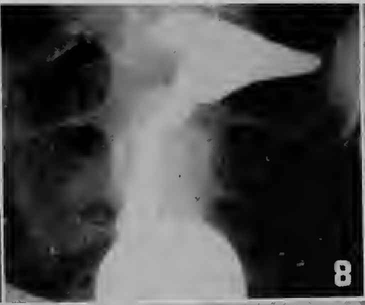
The patient did not menstruate in March, this period being due on the twenty-second day of the month, and subsequently a diagnosis of intrauterine pregnancy was made. This resulted in a spontaneous miscarriage at the end of the third month of gestation. By September, no further conception having occurred, a hysterosalpingogram was repeated and again revealed a complete closure of both tubes at their cornual extremities. Biweekly Elliot therapy was again resumed with conception soon occurring and resulting in the birth of a full term normal infant on July 29, 1940. There has been no further study carried out on the patency of the fallopian tubes since the birth of the child.

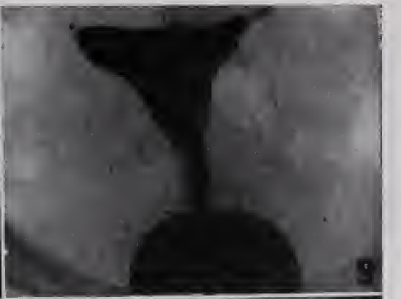
Case 2. Miss N. W., age 26 years, was subjected to bilateral salpingectomy in 1934. Soon after this operation she complained of lower abdominal pain and distress accompanied by menorrhagia. Upon consulting me in 1936, a hysterosalphingogram revealed the uterus to fill readily and a small amount of dye was seen to enter the cornual portion of both tubes. There was no evidence of any spill of dye into the peritoneal cavity (fig. 9). Accordingly, supravaginal hysterectomy, including removal of the remaining portion of the tubes, was performed. This procedure was followed by complete recovery.

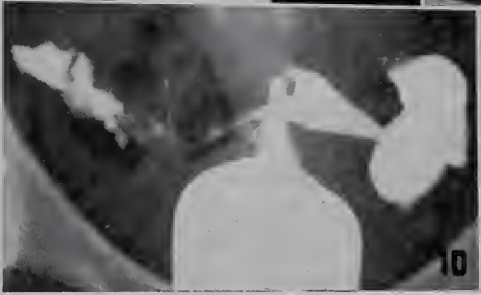
It has been my opinion for the past ten years that as conservative treatment as possible should be used in management of inflammation of the fallopian tubes. However, if operation is once decided upon, it should be fairly radical and consist of bilateral hysterectomy or fundectomy with as conservative surgery as possible on the ovaries.

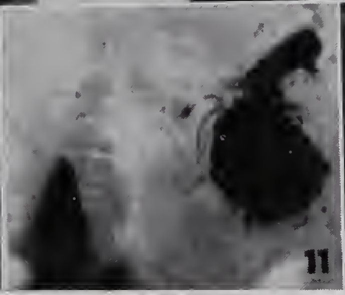
Case 3. Miss T. B., age 24, revealed a fairly good sized hydrosalpinx following salpingogram (figs. 10 and 11).











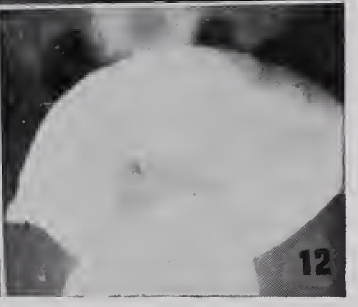


Fig. 7. Hysterosalpingogram revealing normal outline of uterus with occlusion of both tubes at cornual extremities.

Fig. 8. Occlusion of both tubes at cornual ertremities in a case of secondary sterility.

Fig. 9. Visualization of small portions of proximal extremities of both tubes subsequent to previous bilateral salpingectomy. No oil is seen to enter peritoneal cavity.

Fig. 10. Large left hydrosalpinx; right tube patent with oil entering peritoneal cavity.

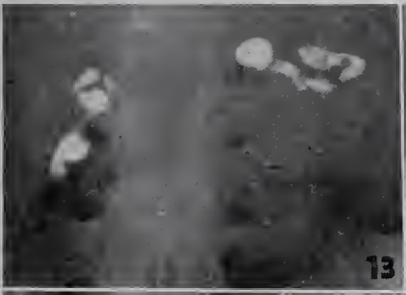
Fig. 11. The same hydrosalpinx following twenty-four hour roentgenogram as visualized in figure 10. Note enclosed retention of the dye.

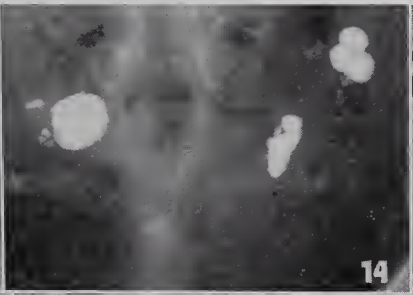
Fig. 12. Large opaque shadow of uterus due to presence of enlarged uterine cavity in a case of fibromyomata uteri.

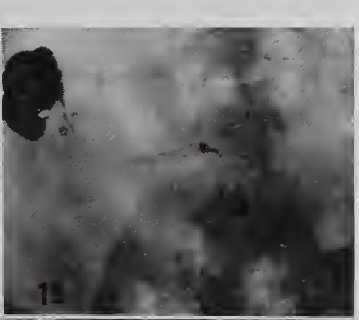
This was subsequently removed at operation, the specimen measuring 9 cm. in length with an isthmial diameter of 3 and 1.3 cm. and containing brownish-yellow fluid.

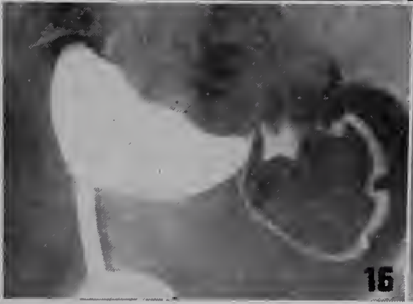
Case 4. Mrs. J. H., age 30, complained of menorrhagia and metorrhagia of five years duration. She had never been pregnant. Pelvic examination revealed a firm, irregularly enlarged uterus, reaching approximately one-half distance between the symphysis and umbilicus and palpable mainly on the left side of the midline of the abdomen. A hysterosalpingogram (fig. 12) revealed a uterus with an enlarged uterine cavity. The specimen removed at operation weighed 235 Gm. and consisted mainly of a large submucous fibromyoma with hemorrhage into the overlying endometrium.

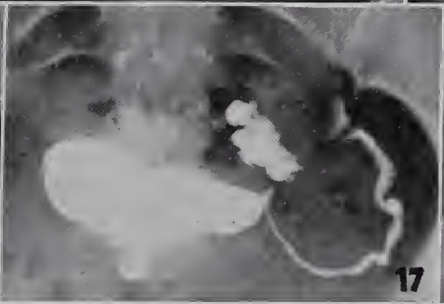
Case 5. Miss D. E., age 22 years, complained of persistent pelvic pain and distress for the past year with two acute pelvic inflammatory recurrences during that period. Pelvic examination failed to reveal any demonstrable enlargement of either tube, although there was considerable bilateral











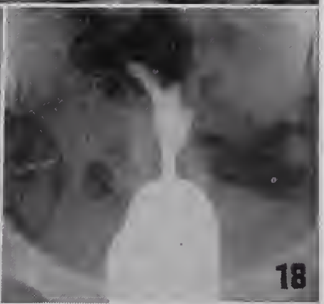


Fig. 13. Hysterosalpingogram taken ten minutes after injection of iodized oil and after removal of all instruments. No definite evidence of escape of oil into peritoneal cavity noted.

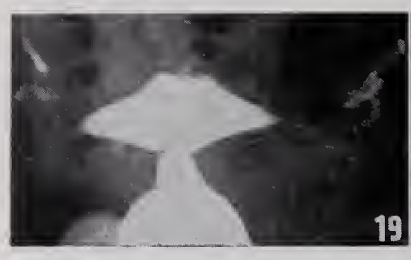
Fig. 14. Twenty-four hour roentgenogram of same patient as seen in figure 13. Note fixed retention of opaque medium and droplet sign on right due to presence of oil in fluid medium. Diagnostic of bilateral hydrosalpinx.

Fig. 15. Bilateral hydrosalpinx visualized twenty-four hours after injection of iodized oil.

Fig. 16. Hysterosalpingogram revealing occluded right tube. Left tube is dilated in its distal one-half with questionable patency of its fimbriated extremity.

Fig. 17. Ten minute roentgenogram of same patient as in figure 16. Right tube still occluded at cornual extremity. Left tube shows presence of fairly good sized hydrosalpinx; again note presence of droplet sign.

Fig. 18. Double filling defect present in fundus and left horn of uterus producing occlusion of left tube. Right tube patent.



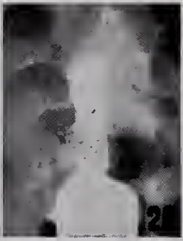


Fig. 19. Small filling defect near fundus of uterus due to retention of small portion of decidual tissue.

Fig. 20. Irregularities in distal border of oil present within uterus, together with narrowing of lumen of uterus and occlusion of both tubes found six months after a case of general peritonitis secondary to a left tuboovarian abcess.

adnexal tenderness present. A hysterosalpingogram revealed a bilateral hydrosalpinx. Figures 13 and 14 demonstrate the various steps used in arriving at the diagnosis of bilateral hydrosalpinx.

The diagnostic study to determine the presence of hydrosalpinx in those patients, in whom no palpable pelvic mass is demonstrable, cannot usually be acomplished by examination of the initial roentgenogram taken immediately after injection of the iodized oil. Figure 15 demonstrates a bilateral hydrosalpinx found on a twenty-four hour roentgenogram, there being a fixed retention of the oil within the distal dilated portion of both tubes with no evidence of the oil in the peritoneal cavity.

Figure 16 reveals a well outlined uterus with the right tube occluded at its cornual extremity and the left tube patent, its distal extremity dilated and a questionable patency of its fimbriated extremity. A second roentgenogram taken ten minutes later on the same patient (fig. 17) demonstrates a definite diagnosis of left hydrosalpinx as evidenced by the dilated distal portion of the tube, fixed retention of the oil and the droplet sign characteristic of oil suspended in a fluid medium.

Abnormalities within the uterine cavity may be readily demonstrated by means of the hysterosalpingogram. Figure 18 exhibits a double filling defect of the fundus and left horn of the uterus, figure 19 a small filling defect near the fundus, and figure 20 definite irregularities in the distal border of the oil present within the uterus, together with narrowing of the lumen of the uterus.

CONCLUSIONS

Hysterosalpingography is of value in visualization of the uterus and tubes. It is a safe and relatively painless procedure. It is valuable as an aid in diagnosis of obscure pelvic conditions and for determining the patency of the fallopian tubes in those patients complaining of sterility.

Note: Appreciation is expressed to Drs. Wallace and James Haworth and their staff for their roentgen ray technic necessary for visualization of the hysterosalpingograms.

CONDITIONED REFLEX TREATMENT OF CHRONIC ALCOHOLISM*

V. TYPE OF PATIENT SUITABLE FOR THIS TREATMENT

Frederick Lemere, M.D.
Walter L. Voegtlin, M.D.
William R. Broz, M.D.
Paul O'Hollaren, M.D.
SEATTLE, WASH.

The technic of the conditioned reflex treatment of chronic alcoholism has been described elsewhere.[1] Essentially it consists of the production by means of emetine of a reflex aversion to the sight, taste, smell and thought of alcohol. There are many other factors involved in this treatment, including psychologic, pharmacologic and physiologic details, that cannot be discussed here.

Results of this treatment in 1,042 cases have also been reported.[2] Of these we have been able to contact 830; 58.7 per cent of these 830 cases, treated from six months to five and one-half years ago, are abstinent. Although these results are substantially better than any previously reported for treatment of chronic alcoholism, we feel the percentage of cures could be greatly improved by a proper selection of cases.

Until now, we have not attempted to select patients but have taken all who came for treatment, provided they were physically fit and cooperative. Results in some apparently hopeless cases, such as a schizophrenic, a mental defective and several senile patients, were astonishing but scattered, and the failures tend to bring the treatment into disrepute.

We have had enough experience to state that the following types of patients are poor candidates for this particular treatment:

CASES UNFAVORABLE FOR TREATMENT

The Financially Indigent. Although we have treated many charity patients, as a group they offer a poor prognosis. Patients who pay the regular fee are usually responsible enough to be financially solvent, or to have impressed friends with their worth to the point where they will risk aid for them. The "Scotch" blood in some patients deters them from relapsing after having paid for a "cure."

The Uncooperative Patient. Many patients come for treatment under duress of the family, the court or their employers. Some have a change of heart after getting started on the treatment, but as a rule a patient who does not voluntarily seek treatment of his own accord should not be accepted. In communities where law enforcement officers personally knew the background of individual patients, encouraging results have been obtained even when a form of duress was used. No doubt these people were the "cream of the crop" as the idea of total abstinence was sold to them by the law enforcement officers who must have had faith in them.

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*From the Research Foundation of Alcoholism and the Shadel Sanitarium.

[1] Voegtlin, W. L.: Treatment of Alcoholism by Establishing a Conditioned Reflex. Am. J. M. Sc., 199:802-810, June, 1940.

[2] Voegtlin, W. L., Lemere, F., Broz, W. R. and O'Hollaren, P.: Conditioned Reflex Treatment of Chronic Alcoholism; Survey of 1042 Cases Treated. To be published in Am. J. M. Sc.

The Constitutional Psychopath. This is a technical name for that group of borderline mental cases who are neither psychotic nor normal. Besides alcoholism there are other signs of instability, such as their frequenting of dives, check writing, pathologic lying, sex perversions, petty criminality and general irresponsibility. They are evasive and deny that their drinking is a problem, in spite of obvious evidence to the contrary. Although we have cured a few of these patients, the results should be classified as a miracle.

The Inadequate. These are the easily led, immature, easily hurt, sensitive individuals with deep-seated feelings of inferiority. There is often a strong mother fixation and an inability to compete or face reality. Their drinking is often solitary and represents an escape from a world that is too tough to take straight. Some of these patients may respond but should be nursed and carried along for an extended follow-up period, if relapse is to be prevented. They need a great deal of sustained encouragement. Badly spoiled only sons, younger sons of large families or children of broken homes, where the parents have remarried, are apt to fall into this group.

The Psychotic. Patients with a frank psychosis should never be treated by this method.

The Deteriorated Patient. Some patients come for treatment too late. Mental deterioration from alcohol and vitamin deficiency, with confusion and memory failure, makes it impossible to establish a conditioned reflex and these patients should not be treated.

Women. We have found it twice as hard to cure women as compared to men patients. Drinking in a woman represents a more serious break with normalcy than in men and is harder to overcome.

There are certain other classes of people who are especially hard to cure for reasons we have not yet discovered. Included in this group are professional men, especially doctors, business executives, bankers, musicians and artists.

Although there has been a tendency to classify alcoholism under the general heading of neurosis, we feel that very few of our patients are truly neurotic. It is surprising how often a neurosis disappears when alcoholism is eliminated from the picture. There are undoubtedly many patients who would benefit from psychotherapy after treatment, but if the patient is cured he rarely seeks further help. If he is not cured, he is not likely to benefit from subsequent psychotherapy. At least, we do not know of any of our patients who have relapsed to be cured later by any method other than religion or their own determination. On the other hand, we have cured several patients who have failed to respond to prolonged expert psychotherapy, and many have previously been in the hands of reputable psychiatrists.

SUMMARY AND CONCLUSIONS

In short, the type of patient best suited for the conditioned reflex treatment of chronic alcoholism is the essentially normal, stable person who has gradually developed the habit until it has gotten the best of him, and now he wants help in breaking this habit and is willing and anxious to stop drinking for good. We base our prognosis on the sincerity of the patient and on how normal he is when not drinking.

The temptation to try the treatment in hopeless cases should be resisted for its reputation in the community may be discredited, thereby losing a valuable psychologic force. A patient's faith in the treatment may be lost or won by his knowledge of other cases who have relapsed or been cured.

LEPROSY*

REPORT OF A CASE

Alex D. Campbell, M.D.
SEATTLE, WASH.

The following is a report of the first case of leprosy reported in Seattle in about five years.

HISTORY

The patient was an 18 year old American born Chinese, whose complaint was a nodular lesion on the cheek and enlargement of one ear. He gave a history of living in Canton, China, from the age of four years until about three years ago.

The first symptom noticed was inflammation of the nose and a catarrhal discharge, beginning just after returning to the United States. There were no new developments until about six months before he presented himself for treatment, when a lumpy lesion developed on the left cheek. Since that time there has been a rapid development of numerous lesions on the arms, legs and feet. He had felt pretty well except for weakness. There had been no febrile episodes, the so-called lepra reactions.

He could give no history of exposure to any particular case of leprosy in Canton. His parents and two siblings in Canton were unaffected as far as he knew. Likewise, one sister who returned to the United States with him, and relatives with whom he has lived the past three years were apparently unaffected.

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*Read before a meeting of King County Medical Society, Seattle, Wash., Oct. 6, 1941.

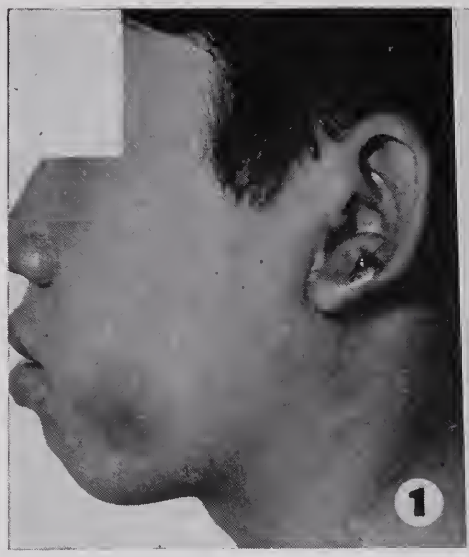
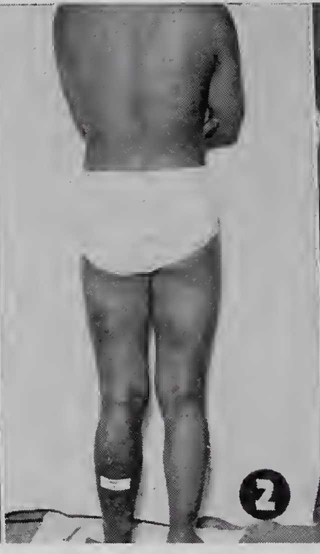


Fig. 1. Nodular lesion on left cheek. Enlargement of ear. Dark area on ear is biopsy wound.



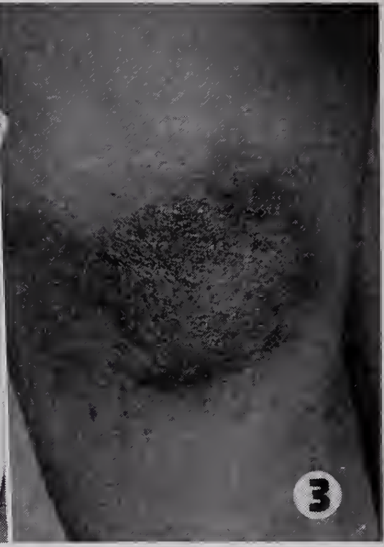


Fig. 2. General view showing distribution of lesions and diffuse involvement of left lower leg and feet.

Fig. 3. Close up of maculoanesthetic lesion on leg.

EXAMINATION

The patient was a well developed Chinese boy. His general physical examination was completely normal. There was inflammation of the nares and a profuse mucopurulent nasal discharge. The throat and larynx were normal.

On the left cheek there was a silver dollar-sized, brownish red lesion, consisting of numerous small nodules, with smooth shiny overlying skin (fig. 1). There was considerable infiltration and enlargement of the pinna of the left ear.

Scattered over the rest of the body, especially over the extensor surface of the arms and the backs of the legs were several palm sized, slightly elevated reddish brown patches (figs. 2, 3). Some of these areas were clearing in the center, producing an annular effect. These lesions were quite thickened and lichenified. In the edges of some of them were pea-sized, almost translucent, yellowish brown nodules. The skin of both feet and ankles was dry, brownish and scaly, presenting an icthyotic appearance.

The nails were normal on both hands and feet. The right index finger was enlarged and to a lesser extent the middle finger. The skin over these fingers was cyanotic.

NEUROLOGIC EXAMINATION

Performed by Drs. Hoedemaker and Lemere, this resulted in the following positive findings: There was definite weakness of both arms and legs, especially of the muscles moving the ankle joints. Sensory examination revealed loss of pain sensation in nearly all the skin lesions, except left ear and left cheek. Loss was greatest in the center of the lesions and less marked at the periphery. Touch sensation was partially lost in most of the lesions. These sensory disturbances appeared about a month after appearance of the lesions. Vibratory sensation was impaired in the right index finger. There was no ataxia. The ulnar nerves were slightly enlarged, but no nodules were palpated. The median nerve in the left arm was also slightly enlarged. The common peroneal nerves were palpable. No other superficial nerves were felt.

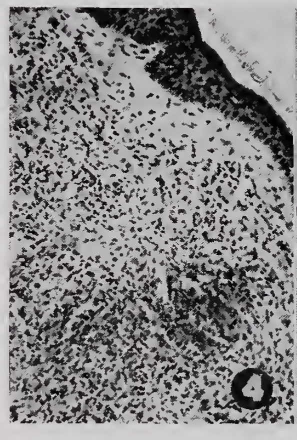
LABORATORY RESULTS

Bacilli: Numerous acid-fast bacilli were demonstrated in the nasal secretion and in biopsy sections from the ear and left leg.

Roentgen Examinations of the chest, hands and feet were completely negative.

Serology: Wassermann and flocculation tests were negative in four different laboratories.

Urine completely negative.



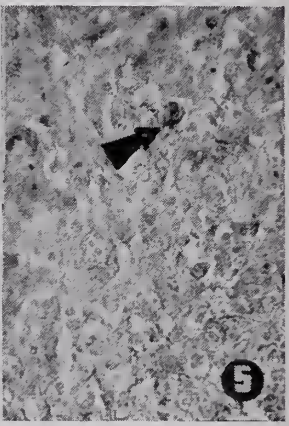


Fig. 4. Low power view showing massive infiltration in cutis and thinning of overlying epidermis.

Fig. 5. Oil Immersion view, acid-fast stain. Arrow points to mass of acid-fast bacilli.

Blood: Red count, 4,800,000; white count, 5,000; hemoglobin, 15 grams; differential normal.

Biopsies were taken from the ear, back of the left thigh and calf of left leg. The pathologic picture in all specimens was essentially the same. There were large masses of epitheleoid cells in the corium. No giant cells were seen. Scattered through these masses were a fair number of lymphocytes and some plasma cells. The epithelium was normal except for thinning due to the pressure of the infiltrate below (figs. 4,5).

SUMMARY

This patient presents a very typical and outspoken example of the mixed type of leprosy. The first lesions to appear, those on the cheek and ear, are of the nodular type. They are considerably elevated and sensation in them is quite well preserved. Those on the legs and arms are of the maculoanesthetic type, presenting large, relatively nonelevated areas, in which pain sensation has been lost. They are associated with enlargement of the peripheral nerves.

DIFFERENTIAL DIAGNOSIS

There is practically nothing else to be considered in the diagnosis. Nothing except leprosy can possibly produce the combination of the skin and neurologic lesions found in this case. Pathologically, Boeck's sarcoid, most cases of which are believed to be a low grade form of tuberculosis, is very similar. However, in it acid-fast bacilli can rarely be demonstrated, and never in the large numbers present in the sections from this case.

DISCUSSION

It is interesting that the Wassermann and flocculation tests are negative in this patient. In perhaps 40 per cent of nonsyphilitic lepers biologically false positive serologic tests are found.

A recent report by Eagle et al[1], on serologic tests using so-called culture strains of Spirochaeta pallida as antigens instead of the usual Wassermann antigens, is of interest. They found that these antigens give relatively few false positive reactions in nonsyphilitic lepers and can, therefore, be used for diagnosis of syphilis in the presence of leprosy. This is disputed by Kolmer et al[2].

According to Michelson[3], lesions involving the nerves are of two types: (1) the ascending and (2) the metastatic type. In the ascending type, the bacilli first attack the skin and then extend up the nerve trunks. This results in maculoanesthetic lesions. In the second type, the bacilli reach the nerves through the vasa nervora and the resulting lesions are atrophy of the interossei with development of the so-called claw hand. Trophic ulcers and absorption of the bones with resultant deformity develop. In this patient the lesion on the index finger of the right hand represents an early involvement of this type.

PROGNOSIS AND TREATMENT

Opinions as to prognosis vary. All agree that the maculoanesthetic cases are less serious than the nodular. In this case the tremendous number of bacilli in the lesions and the rapid development in the past six months indicate a virulent infection.

Chaulmoogra oil and its derivatives are still the most favored treatment. They are given either by mouth or intramuscularly. They are quite toxic in therapeutic doses and often the patient cannot tolerate them in adequate amounts.

Note: I wish to thank Dr. Clyde Jensen for preparing the pathologic specimens in this case.

[1] Eagle, H. et al: On Reactivity of Serum and Spinal Fluid of Leprous Patients with Spirochetal Suspensions. Am. J. Syph., Gonor. & Ven. Dis., 25:397-405, July, 1941.

[2] Kolmer, J. A., Kast, C. C. and Lynch, E. R.: Studies on Role of Spirocheta Pallida in Wassermann Reaction; Complement Fixation in Syphilis, Leprosy and Malaria with Spirochetal Antigens. Am. J. Syph., Gonor. & Ven. Dis., 25:300-318, May, 1941.

[3] Michelson, H. E.: Leprosy; Notes on Visit to National Leprosarium at Carville, Louisiana. Journal-Lancet, 50: 123-129, March 15, 1930.

FASCIAL TRANSPLANT IN HERNIA REPAIR

JAMES F. SCOTT, M.D.
YAKIMA, WASH.

The past decade has given us a great number of articles on the recurrence of hernia. These have usually been collected in the larger clinics with adequate follow-up service.

From this mass of information three factors have been stressed that will cut the percentage of failure sharply as soon as they are generally adopted. They are: (1) use of McArthur's living fascial suture, (2) sewing fascia to fascia, (3) use, when indicated, of a strip of fascia from the thigh as a transplant to fill large defects and to rebuild Poupart's ligament, when previous operations have left it weak.

Whether one uses silk, cotton, fine catgut or wire to anchor the fascial suture is of purely academic interest. Personally the so-called conjoined tendon is always ignored and the cord always transplanted.

In all direct hernias, in double hernias, in recurrent hernias and in the large openings found in old age with large prostates and hemorrhoids a strip of fascia from the thigh is used, It follows the surgical postulates of being logical, simple, direct and easily available. Also the approach to any hernia is relieved of all fear that the condition may not be improved

This transplant has been used to cover large ventral defects for a great many years. When started, I do not know. It seems such common sense that probably no one has claimed the method.

Use of fascia to strengthen the weak bulging transversalis floor of the inguinal canal has a rather ingenious technic that was learned from Kellogg Speed. It involves the use of a strip of about two by seven inches.

Given a double hernia, both sides are opened and the sacs treated in the usual way. Then one end of the strip is sewed firmly to the shelving edge on one side, carried across behind the posterior rectus sheath and sewed in the same way to the opposite edge. It is firmly anchored low to the pubic spines and with a few guy sutures the fascia is fanned out to make a strong supporting bridge.

The native ingenuity of the surgeon will not be overtaxed to change the procedure to meet any defect and so far our only failure was the first one done, when the fascia was not anchored down properly to the pubic tissue. The last operation effected a cure. Always repair the defect in the thigh very carefully; otherwise a most crippling muscle hernia will follow.

OSTEOPOIKILOSIS

DISSEMINATED OSTEOSCLEROSIS

EDWARD H. MCLEAN, M.D.
OREGON CITY, ORE.

Osteopoikilosis is a term used to describe the roentgen appearance occasionally found in bone. It is characterized by the presence of areas of density, most often found in the long bones in the epiphysis and metaphysis. The spots vary from pin head size to about a centimeter in length and are usually ovoid. Betwen the spots, when closely packed, the bone often appears rarefied, but this may be purely relative. It occurs most commonly in the long bones, bones of the hands and feet and in the pelvis. The case under discussion shows spots in the scapula and clavicle. It is rarely seen in the vertebrae or ribs and only once has it been described in the skull (Erbsen.[1])

Whether this appearance represents a pathologic entity or whether it is purely an anomaly of bone structure has not been determined. However, there have been described in several cases disseminated lenticular fibrosis, scattered oval elevations of the skin without change in color, which on microscopic examination show diffuse fibrosis of the cutis (Buschke and Ollendorf[2]). Other observers state that their patients complained of pain in the joints adjacent to the areas of bone condensation.

The condition was first described by Albers-Schönberg[3]. Wilcox[4] and later Svab[5] reported groups of cases, showing that there is a familial character to this condition. Since the Albers-Schönberg case in 1915 about fifty cases have been reported, several of these being in family groups When one considers the millions of roentgenograms taken over the world, the condition is shown to be rare indeed.

Except for the familial tendency there is nothing known of the etiology. Svab reported three cases in one family, all of whom had diabetes, but this relationship has not been borne out by others reporting this condition. The father in Svab's cases had disseminated lenticular dermatofibrosis as did cases reported by Buschke, Ollendorf and Windhols. They believed that the two conditions had a common cause. In the histories on physical findings of the cases reported there is no common finding that might point to a causative factor.

Recently Busch[6] has described fifteen cases, fourteen of which were in one family group. The first case in the family was discovered by accident which lead him to investigate all the relatives whom he could contact. He investigated all the members of three generations and found cases in all. The earliest case was two years of age, the changes seeming to become more marked up to adult life and then to recede. He believes that the condition is inherited dominantly. From a study of his charts one would believe the condition to be transmitted through the male. Six of his fourteen patients had disseminated lenticular fibrosis of the skin. In none of the family group did the skin changes occur without the bone changes.

Most of the cases, especially the first in a family group, have been discovered quite by accident, as was mine, in the course of making a film for some other suspected condition. The patients are, as often as not, in good physical health. The blood, cytologically and chemically, show normal ranges; blood calcium, which might be under suspicion, shows no change. There is no evidence of syphilis. Schmore[7] was able to obtain bone tissue for pathologic diagnosis and found that the islands of condensation contained numerous osteoblasts and osteoclasts without evidence of cartilage, and the trabeculae faded off into the surrounding spongeosa. Holly[8] studied his cases over a period of years and found there is a constant change in the islands,

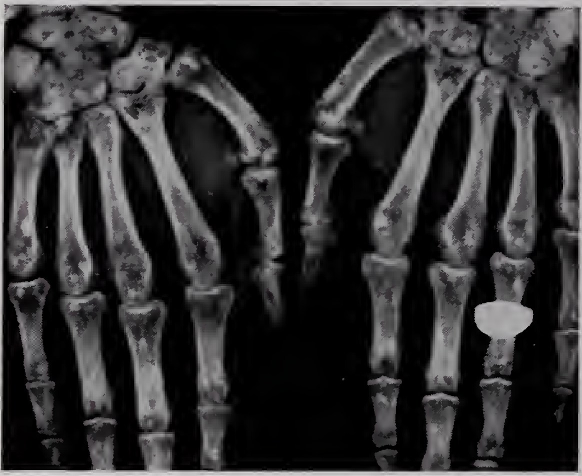


Fig. 1. Hands showing numerous spots scattered throughout the bones but more prominent toward the epiphyses.

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[1] Erbsen, H.: Osteopoikilie des Schadels. Klin. Wchnschr., 13:1306-1308, Sept. 15, 1934.

[2] Buschke, A. and Ollendorff, H.: Ein Fall von Dermatofibrosis lenticulars disseminata und Osteopathia condensans disseminata. Dermat Wchnschr, 86:257-262, Feb. 25, 1928.

[3] Albers-Schonberg: Eine Seltene, bisher nichtbekamite Strukturanomalie des Skelettes. Fortschr. a. d. Geb. d. Rontgenstrahlen, 23:174-175, 1915-1916.

[4] Wilcox, L. F.: Osteopoikilosis (disseminated condensing osteopathy). Am. J. Roentgenol, 27:580-584, April, 1932.

[5] Svab, V.: Hereditary Osteopoikilosis. Casop. Ck. cesk., 71:742-748, June 10, 1932.

[6] Busch, K. F. B.: Familial Disseminated Osteosclerosis. Acta Radiol, 18:693-714, 1937.

[7] Schmore, G.: Anatomische Befunde bei eruem Falle von Osteopoikilie, Fortscher. a. d. Geb. d. Rontgenstrahlen, 44:1-8, July, 1911.

[8] Holly, L. E.: Osteopoikilosis; 5-year Study. Am. J. Roentengol, 36:512-517, Oct., 1936.

some disappear altogether and entirely new ones form, while there is evidence of change in shape and some of the original islands, especially in children enlarge.

The case which came to my attention was of a boy of twenty years who worked in a saw mill. He came because of an injury to his left shoulder, sustained when he tried to catch a falling plank. The roentgen appearance of the shoulder was so striking that I took a film of the opposite side and found that both shoulders showed in the head of the humerus and extending down into the upper part of the shaft, as well as in the neck and acromial process of the scapula and clavicle, these oval areas of bone condensation which gave the film a bizzare, mottled appearance. I took the films to a number of my colleagues, medical, surgical and roetgenologic and found a different diagnosis on each visit, varying from metastatic carcinoma through tuberculosis to disease of the parathyroid.

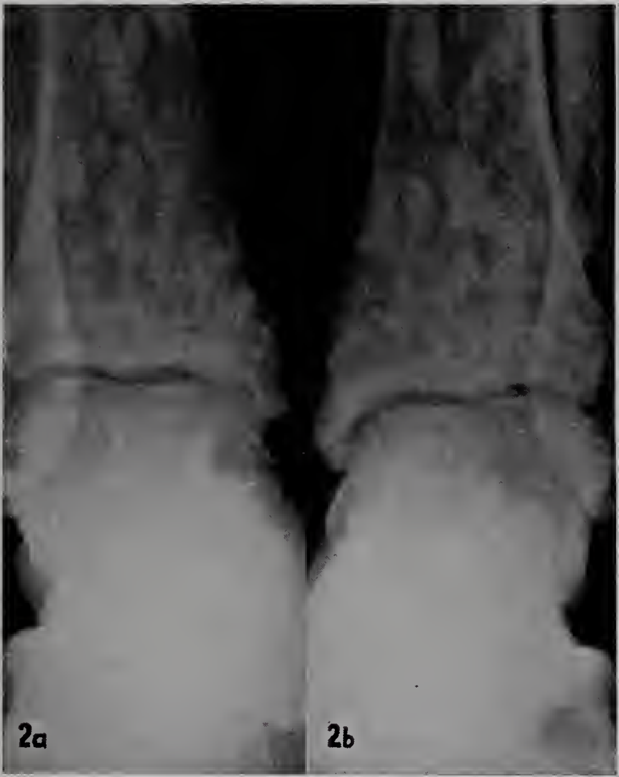

Fig. 2a, 2b. Ankles showing numerous areas of density in the lower ends of the tibial.

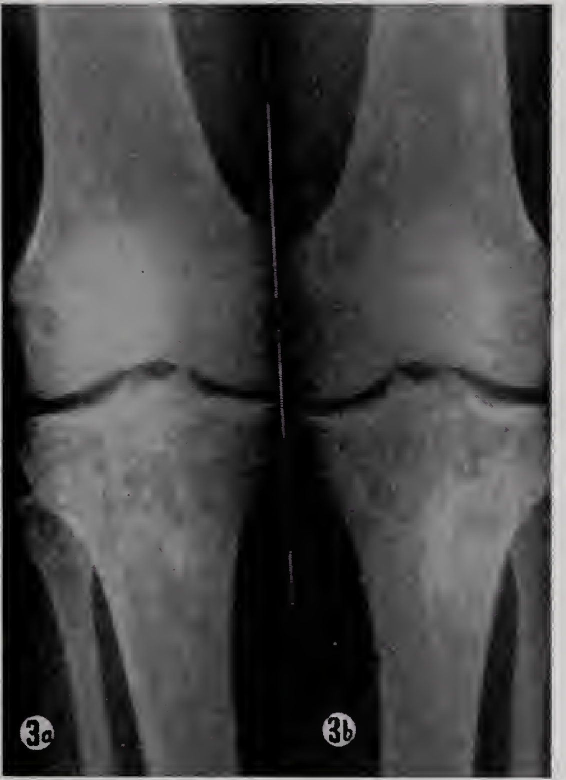

Fig. 3a, 3b. Knees showing numerous areas of condensation of the long bones.

I obtained an opportunity to reexamine the patient and roentgenized various parts of the body and found the appearance widely distributed, being especially marked in the hands (fig. 1), forearms, feet, legs (figs. 2, 3) and pelvis. My case showed no spots in the vertebrae, ribs or skull, though there were spots in the sacrum, and the skull showed an appearance that was more one of rarefication.

General examination of the patient shows an exceptionally robust young man, who has always been in good health. There are no joint pains, no evidence of skin eruption. Blood chemistry was not done.

The mother, who has a toxic adenomatous goitre, was roentgenized without finding this condition. The father, aged 70 years, has a few scattered spots in the hands, feet and pelvis. It is possible, though, due to his age, the spots have become absorbed and, the causative factor no longer operating, no new ones have formed.

It is my feeling that the condition in the father represents a terminal stage and, if the condition in the son could be studied up to the same relative age, we would find a gradual disappearance of the spots, though no one yet has had an opportunity to follow a case that far. There are two sisters living in California, whom I have not had the opportunity to examine.

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TREATMENT OF POISON GASES*

Arthur S. Rosenfeld, M.D.
PORTLAND, ORE.

Poison gases, or chemical agents, used in warfare are divided into three main groups: (1) lung irritants, (2) vesicants, or blister agents, and (3) irritants. Patients exposed to the first two groups are casualties and should be removed on stretchers and never allowed to walk. The third group produces mere harassing symptoms and victims of this group are not casualties.

LUNG IRRITANTS

Phosgene

This is a gas which is first white, then changes to a colorless stage and has the smell of new cut hay or green corn. It persists on the open ground for five to ten minutes in summer and twenty minutes in winter. The protection needed is a gas mask.

EFFECTS ON THE BODY

This gas irritates the mucous membranes of the nose, throat, eyes and larynx, and produces special changes in the tissues of the lungs. Choking, coughing, hurried breathing and pains in the chest follow. The effect progresses slowly. Damage to the lungs causes the walls of the pulmonary blood vessels of the alveoli to become permeable to fluid. The alveoli fill with blood plasma. There follows the clinical picture of pulmonary edema with dyspnea, exaggerated rapid breathing effort, cyanosis and signs of suffocation. The loss of plasma causes an increase in the per cent content of red blood corpuscles. The blood becomes viscid and tarry and its flow through the capillaries diminishes in velocity.

Other organs, particularly the heart, are secondarily affected. Heart failure may occur, owing to the great strain put upon the heart by the pulmonary congestion and by its lowered nutrition. The pulse may rise to 160 or more. Blood pressure is low. Thrombosis and embolism occasionally occur. The nervous system may show the following symptoms: headache, giddiness, staggering gait, muscular weakness, stupor or absolute unconsciousness, depression and lethargy. The digestive symptoms are loss of appetite, a sense of oppression in the stomach, nausea and vomiting. Less often there is diarrhea with bloody stools. The urinary system shows transitory albuminuria with low urine chlorides. Diuresis occurs as the pulmonary edema subsides.

TREATMENT

Conjunctivitis: This is best treated by lavage with 3 per cent boric acid solution followed by instillation of a nonirritant alkaline ointment. The eyes may be covered for photophobia. Atropine is used for pupillary spasm.

Laryngitis and Bronchitis: These are treated with alkaline gargles and steam inhalations.

Lung Damage: It should be stated that there are two types of lung casualties. The first is called the gray or shock type and is the more serious of the two. These patients should have the usual treatment for shock with transfusion of plasma and blood, etc. in frequent small amounts.

The second type is designated as the cyanotic or blue type. In both cases heavy muscular exertion must be avoided. These patients are stretcher cases and should not be allowed to walk. They should be rested in the fresh air and transported in ambulances with much fresh air. They should be kept warm with blankets and hot water bottles. By far the most important treatment for these casualties is inhalation of oxygen by any means available, that is, catheter, mask or tent. A 60 per cent oxygen content of the air is sufficient and inhalations should be continued as long as cyanosis is present.

By no means use artificial respiration. Generally, copious venesection with removal of 400 to 700 cc. of blood in the cyanotic cases gives quick relief. The blood may be so thick as not to flow through a needle, and in this case cutting across the vein with a scalpel is advocated. Cold compresses to the chest are helpful. Give much water by mouth or enemeta. Food should be fluid such as broths, jellies, milk, etc. Give alcoholic stimulants, hot coffee and hot tea. Coughing may be controlled by inhalations and opiates, although the latter should be given with caution by reason of the respiratory embarrassment. Atropine may be of help and digitalis may be used intravenously. Camphor and caffeine are valuable stimulants. For restlessness, it is better to use barbitals than opiates.

Chlorine

This is a pungent, greenish gas, persisting for five minutes on open ground. It causes coughing, smarting of the eyes, discomfort in the chest, followed by nausea and vomiting. A two minute exposure to the average concentration produces a casualty with lung damage. The best protection is a gas mask and the treatment is the same as that outlined for phosgene.

Chlorpicrine

This is an oily liquid which changes slowly to a colorless gas in the open and has a sweetish odor like fly paper. It persists two hours in the summer and about twelve hours in the winter. It produces the same watering and irritation of the eyes as phosgene with coughing, nausea, vomiting and lung irritation. It is about one-fourth as toxic as phosgene and calls for the same treatment.

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*Compiled for use in emergency casualties at Good Samaritan Hospital, and adopted as official by Multnomah County Medical Disaster Committee.

VESICANTS

These agents, as their name implies, not only blister the skin with resultant inflammation, burns and destruction of tissue, but they also produce irritating effects upon the lungs and eyes. Severe cases are casualties and should be evacuated. There are two main vesicants: mustard gas and lewisite.

Mustard Gas

(Dichlorodiethyl sulphide)

This is oxidized by artificial means or naturally in the body to sulphone and HCl, which are less harmful than the original gas. It is logical, therefore, in this condition to use oxidizing agents.

Mustard gas is a dark brown liquid which changes slowly to a colorless gas. This vesicant is discharged into the air when the shell explodes. It has a garlicy, or horse-radish odor and it may persist on the open ground for three to four days in summer and several weeks in winter. It tends to cling to clothing. Therefore, any contaminated clothing must be immediately removed or cut away as the effects are cumulative and prolonged. The protections needed are gas masks and protective clothing. Decontamination of clothing, food, ground and road surfaces is a most important part of treatment for this poison.

EFFECTS ON THE BODY

The symptoms are generally delayed from two to four hours but usually become evident after four to six hours. There may be a longer incubation period up to several days. It is exceptional for symptoms to appear immediately on exposure because high concentrations can be tolerated without irritation of the superficial sensory nerves. The first symptoms are redness, burning, itching of the skin, headache, malaise, vomiting and burning of the eyes. The symptoms develop obstinately and tend to extend over a long period. Skin damage is more pronounced after contact with the liquid, and mucous membrane damage after exposure to vapors.

EFFECTS ON THE SKIN

The first symptom is an inflammatory reddening like urticaria, sometimes punctate and sometimes diffuse with burning. In other cases the reddened skin gradually becomes dark brown or bronze color due to the formation of pigment, while the upper layers of the epidermis become indurated. After one to two weeks, this altered epidermis comes away in large flakes and gives place to fresh, normal skin. In a third form there is a brawny desquamation of the upper layers of the skin with deep, hemorrhagic spots preceded by tiny, superficial blisters. These victims also recover quickly.

The severe cases are more chronic. The initial redness gives way to a brown or dark blue discoloration and the subcutaneous swelling increases. This stage lasts from eight to twenty-four hours after exposure. Blisters begin to appear with a clear, serous fluid. They increase in size, may coalesce and may reach the slightly hemorrhagic area which, after the blisters are ruptured, soon becomes moist with a viscid, purulent exudate. These moist surfaces give rise to very severe pain and intolerable itching which interfere with sleep. They persist for long periods without improvement, giving the impression of a weeping eczema.

The epidermis gradually spreads in from the periphery and finally leads to regeneration of the skin and healing. Simultaneously, necrotic tissue fragments come away as flat, yellow, caseous shreds like the core of a boil. If tissue necrosis is deep enough, formation of skin occurs only after the growth of granulation tissue. Scabs remain up to the end of the healing process. In general, six to eight weeks are required before ulcerated surfaces heal. This typical course may vary from that of simple blisters to weeping eczema without blisters.

Edema and mucous membrane ulceration are particularly severe about the genitalia, simulating venereal disease. Various areas of skin vary in sensitiveness. The coarse skin of the palmar surface is less sensitive. The genitalia, anus and those places where two moist surfaces come in contact or which are moist with perspiration, are particularly sensitive. Obstinate acne or furunculosis may develop as a sequel. Loss of hair is rare. Contents of these blisters, which contain clear fluid, may also affect the skin of perfectly healthy persons, for example, medical and nursing personnel. Gloves should, therefore, be worn in making dressings.

Relapses have been observed without any fresh exposure and are prone to occur in places completely covered with newly formed skin. These may be more severe than the original lesion. The healed areas show pigment anomalies, mostly a bronze discoloration; also one may see diminution of pigment over the healed areas or a very red skin which lasts for a long period. Cicatrization occurs under the skin with infiltration into the deeper tissues so that patients may complain of pain or loss of muscle power beneath the scars.

EFFECTS ON THE EYES

There may be no warning of damage to the eyes until four or five hours after exposure, even though mustard gas has a marked action on them. Early symptoms are burning, smarting, photophobia, slight heaviness of the upper eyelids, feeling of presence of foreign bodies, lacrimation and headache. Those who stay awake get less damage than those who fall asleep because the former by winking tend to get rid of some poison. Later there are great edema of the lids and conjunctivitis which soon becomes purulent. The lid edges become sore and covered with crusts. All these symptoms become exaggerated and the cornea may become hazy in the space between the lids. The eyes cannot be opened. The iris and ciliary bodies are hyperemic and strongly stimulated. The pupil is narrowed and the lense is spasmodically accommodated. Cloudy specks appear in the parenchyma of the cornea. Superficial and deep necrosis in the cornea have been demonstrated.

The height of the inflammation is reached in three to four days, from which time the symptoms gradually subside. The corneal cloudiness disappears in one to three days, the conjunctivitis in one to three weeks. Scarring of the cornea may persist with distortion, producing indistinct vision. If the undiluted liquid comes in contact with the eye, lasting visual impairment or even loss of the eye may occur.

EFFECTS ON THE RESPIRATORY ORGANS

The upper respiratory organs bear the brunt of this poison gas. At first, they show merely catarrhal symptoms, that is, redness, swelling and increased secretion from the mucous membrane of the nose, larnyx and throat, with itching, prickling or stinging sensation and nasal obstruction as in a severe cold. These symptoms are followed by soreness, crusts in the nostrils, red, granular throat and purulent angina. The mucous membranes of the larynx and epiglottis are inflamed and covered with mucus, causing marked hoarseness, rawness and tormenting cough. Generalized bronchitis is rare. The upper layers of the mucous membrane become necrotic, forming a diphtherialike, false membrane. Dysphagia and even asphyxia may occur from occlusion of the glottis.

Purulent bronchitis, patchy bronchopneumonia or true lobar pneumonia may occur. This may subside by crisis. In the most rapidly fatal cases, instead of pneumonia, a characteristic, pulmonary edema follows similar to that of phosgene. These various pulmonary symptoms are extremely exhausting to the patients. If recovery takes place, many weeks or months are required for restoration of health.

GENERAL EFFECTS

In addition to the above mentioned symptoms, there occur listlessness, sleepiness, headache, thirst and slight rise of temperature for a few days. Lung complications give prolonged high fever. The blood is concentrated at first, due to increase in the red blood corpuscles. Later anemia may appear. The blood pressure is low, the pulse rapid and thready. Small amounts of albumin are found in the urine. Symptoms referable to the gastrointestinal tract are vomiting, pain in the stomach, diarrhea or obstinate constipation. Hemorrhages may occur in the intestinal mucosa. Vertigo, giddiness, emotional irritability or apathy are the only symptoms referable to the nervous symptoms. Loss of energy and alteration of disposition may last for many months.

TREATMENT

Remove the patient from the gassed area. Remove all contaminated clothing. Cut away portions of clothes splashed by liquid. If the face has been exposed to the gas, wash the eyes and rinse the nose and throat with saturated boric acid solution or a weak solution of baking soda or common salt. First aid must be prompt. If the gas is breathed, treat the patient as a lung irritant casualty. Do not allow him to walk; move him by stretcher. Visible burns may be lessened or prevented by an immediate hot bath. Cleansing the skin with kerosene or gasoline before using soap is desirable. Areas wet with liquid mustard should be immediately and repeatedly swabbed with kerosene, gasoline, any oil, alcohol, carbon tetrachloride, pyrene or a weak solution of chloride of lime and water, using a fresh cloth each time. *Do not rub! Mop!* After this, use hot water and soap.

All clothes should be burned. If nothing else is available, cover the burns with weak lime solution or just moist dirt. The Germans use potassium permanganate wash as a primary measure. In simple erythema, dusting powder, such as bismuth carbonate, bismuth subgallate, zinc oxide or talc may be used. Also, a wet dressing of 1:5,000 potassium permanganate, if the bluish or violet pigment action is already present. Blisters should be opened as soon as possible, with care that the fluid does not come in contact with the patient or attendant. The underlying, painful, weeping surfaces may be dusted with the above powders plus the addition of anesthetic drugs or a wet dressing of 1:2,000 potassium permanganate or 1:1,000 zinc chloride.

Dressings are done daily aseptically. Clean the parts about the blisters. Weeping surfaces between the fingers are bathed every day with silver nitrate solution and kept separated. After the sore areas have become clean, soothing and stimulating ointments such as balsam of Peru may be used. Moist dressings are indicated for burns about the genitalia.

The English advocate the use of the triple dye method in treatment of these burns. This is an aqueous solution of 2 per cent gentian violet, 1 per cent brilliant green and 0.1 per cent neutral acriflavine. The whole body is washed with a bleaching powder solution of 60 grains to the pint. The patient is anesthetized with gas and oxygen. all loose skin is cut away and the wound is swabbed with warm saline solution. The area is then dried with an electric hair dryer and sprayed with the triple dye. This is dried and a second application is sprayed on which then produces a thick, supple tan which is adherent everywhere. The dyed, burnt areas are not covered with any dressing, but the patient, with the exception of the head, is shrouded with a hot-air cradle. If any moist areas appear later they are again sprayed. Healing is slow and may take from six to eight weeks.

For the eyes, rest in a dark room is required. Remove the secretion frequently by irrigating the eyes every two or three hours with a 3 per cent boric solution. For severe pain, 2 per cent butyn sulphate and 5 per cent of 1:1,000 adrenalin may be instilled. If the iris and ciliary bodies are also affected, 1:1,000 atropine is indicated. Following the irrigations, a mild alkaline ointment may be inserted in the conjunctival sac. The formula for the alkaline ointment is as follows:

Sodium biborate	1.0
Sodium bicarbonate	2.0
Lanoline	10.0
Vaseline ad	100.0

Tannic acid solution was used to treat mustard gas burns in the Italo-Ethiopian war with encouraging results. For the respiratory complications, treatment is similar to that of phosgene poisoning.

Lewisite

This is a dark brown liquid, smelling like geraniums and changing slowly to a colorless gas. It persists on the open ground for twenty-four hours in summer and several weeks in winter. Its victims are casualties and should be evacuated on stretchers. Like mustard gas, it produces skin irritation, only in a shorter period of time, that is, about fifteen minutes. The irritation is followed in thirty to sixty minutes by a grayish discoloration and formation of blisters. These contain turbid fluid full of leukocytes and are not surrounded by a zone of erythema like mustard gas blisters. They should be opened at once. The blisters contain a systemic poisoning (arsenic) which causes vomiting and the gas, if breathed, acts as a powerful lung irritant within a half hour. If the eyes are not protected, they are irritated immediately. First aid, therefore, must be almost immediate with treatment similar to that for mustard gas. The greatest danger to life is absorption.

TREATMENT

For the vapor burn, first apply a 0.5 per cent solution of aqueous sodium hydroxide and follow with soap and water. If the former is not available, use soap and water only. Then cover quickly with ferric hydrate paste and gauze. For the liquid burn, after applying sodium hydroxide, swab the area with oil as for mustard gas and then dress with ferric hydrate paste. The secondary treatment is directed toward elimination of arsenic from the system, that is, intravenous injection of sodium thiosulphate solution, etc. The English recommend treating the burned area with hydrogen peroxide, followed by triple dye applications. Lung complications are treated the same as mustard and phosgene.

Phosphorus

Phosphorus, particularly, may burn deep into the skin. This results from the back-flash of incendiary bombs containing phosphorus. First aid treatment consists in applying 2 per cent solution of copper sulphate. This produces an inert chemical substance preventing further damage.

IRRITANTS

Adamsite

This is a yellow smoke, smelling slightly like coal smoke, which becomes invisible before the chemical is dissipated. It causes immediate sneezing, headache, nausea, vomiting and temporary physical disability. It persists about three minutes on the open ground. Protection needed is a gas mask.

TREATMENT

Place the patient at rest, loosen the clothing, bathe the nose and throat with salt water or baking soda solution; wash body surfaces with soap and water. Keep away from heat. Breathing from a bottle containing chloride of lime is helpful. These victims are not casualties and should not be evacuated.

Chloracetaphenone

This is a bluish gray smoke from a burning powder which smells like ripe fruit or apple blossoms. It lasts about five minutes, irritates the eyes and causes lacrimation. Bathe the eyes with saline or mild alkaline solution. These victims are not casualties.

Tear Gas

This is a colorless liquid changing to a colorless gas with a sweet odor like fly paper. It persists on the open ground for one hour in summer and six hours in winter, producing lacrimation with nausea, vomiting and temporary disability. Bathe the eyes with saline or mild alkaline solution. Have the patient leave the gassed area and face the wind; do not evacuate**.

**The material presented in this paper was obtained from the following: Surgery, p. 207, Aug., 1941; U. S. Army Manual; Chemical Warfare Bulletin, Vol. 27, No. 1, Jan., 1941, and No. 3, July., 1941; U. S. A., G.H.Q., Pamphlet (Translated from German Tract), July, 1918, issued to all Medical Officers, AEF; Journal of Aviation Medicine, Vol. X, March-Dec., 1939; British Medical Journal, p. 980, June 28, 1941; Lancet, 1940-41.

SALMON POISONING

Carl Scheffel, M.D.

MIAMI, FLORIDA

One of the chief dreads of the commercial salmon fisherman is a pathologic condition known to him as salmon poisoning. This condition is capable of undermining the salmon fisherman as an efficient industrial worker both from the standpoint of the actual physical disability it may cause as well as the psychologic effect that the mere fear of the condition has upon him.

So far as I have been able to determine, it is impossible to find reference to this syndrome in the medical literature. Indeed, other than pointing out that it is not a recognized disease entity in the literature, none of the industrial physicians in Alaska, with whom I discussed so-called salmon poisoning, seemed to be familiar with its etiology. A few observations, therefore, may throw at least some light on certain aspects of this syndrome.

Prior to my seeing cases of so-called salmon poisoning I had been led to believe that the condition was nothing more than a localized bacterial infection. However, the clinical history of actual cases soon forced me to the tentative conclusion that factors other than bacteria were concerned in its etiology. For instance, it soon became evident that, although a relatively small percentage of fishermen, as well as certain others, became victims of salmon poisoning, many of these patients had suffered repeated attacks of varying intensity. This fact directly pointed to the probability that undue susceptibility to the causative agent or agents existed in the repeat cases. Moreover, it was also soon disclosed that almost without exception the condition arose only following prolonged fishing activity or otherwise handling either unwashed or partly washed salmon.

Salmon fishing and canning make it necessary for those catching the fish, as well as some persons subsequently handling them before they have been thoroughly washed, to immerse their hands and forearms for prolonged periods of time in cold salt water. Therefore, when cognizance is taken of the well established facts that on the one hand the skin is by no means impervious to water, and on the other hand that sodium chloride exerts a marked tendency towards excessive water retention in the tissues, we can readily understand that prolonged cold salt water immersion produces a definite localized edematous condition in these workers.

Although it is believed that, while this localized edema production does not form the basic etiologic factor involved in salmon poisoning, it undoubtedly does act in preparing the exposed tissues thus made edematous to become unduly sensitized to what I believe is the primary etiologic factor. In fact, I believe that this preliminary edematous state produces two distinct effects. First, it tends to make the tissues abnormally permeable to certain water-soluble proteins involved; and, second, by definitely altering the localized circulation it creates a more fertile and much less resistible soil for complications in the form of secondary bacterial infections.

Perhaps the chief reason why many physicians have assumed this syndrome to be a localized bacterial cellulitis is that it is clinically difficult to distinguish from this conditon, and actually is complicated in many instances with active bacterial invasion. However, since some of the symptoms and other phenomena of this condition did not harmonize with that of a simple bacterial cellulitis, especially in some of the severer forms seen, an effort was made to locate, if possible, other etiologic factors.

Unfortunately, at the time these observations were made, although some methylene blue stain was available, neither a microscope nor other laboratory apparatus was within a hundred miles of the Bristol Bay area of Alaska in which I was stationed. However, I had taken with me some cover glasses intended to be used for other purposes, and upon these I made smears from each case of salmon poisoning handled. Some smears were made from cases presenting intact cellulitis and some from cases that had been opened for drainage purposes.

Examination of all of these smears after returning to the states showed the presence of morphologically identified short chain streptococci in four, staphylococci in three and B. coli in one of the entire group of twenty-six cases. These findings would undoubtedly have been of far greater value, if means had been available to make identification possible on a cultural rather than microscopic basis. But even this finding strongly suggests that bacterial infection probably forms a complicating rather than a basic factor in salmon poisoning.

Salmon, when first caught, are covered with a peculiar slime which adheres to their exterior fairly tenaciously. It was observed that neither fishermen nor other employees handling the fish, before they were thoroughly freed from this slime, were immune to salmon poisoning. Conversely, not a single case arose in those employees handling the fish after all of this slime had been removed. And what is even more significant, the incidence of the condition among the workers decreased in direct ratio to which the fish had been freed of this slime at the point of the process in which they handled them.

For instance, while the fishermen who caught the fish showed by far the highest incidence of the affliction, and notwithstanding that the salmon are washed with fresh water with a forcible stream before they are fed into a machine which decapitates them, the personnel feeding that machine, when viewed in terms of percentage of all personnel handling the partially washed fish, showed the second highest incidence. Conversely, those Filipinos engaged in the process called "sliming," after the fish had been relatively well washed with fresh water, showed the lowest incidence in terms of percentage of all workers handling unwashed or partially washed fish. Certainly these observations pointed a suspicious finger toward the slime adherent upon freshly caught unwashed salmon.

In view of the foregoing observations, slime was scraped directly from fish as they were brought in by the scow and collected under sterile conditions. Chlorobutanol was added as a preservative. Inasmuch as all fishermen at the station in which I was located were obliged to have their hands inspected each week, it was intended to undertake large scale patch testing with this slime on all fishermen and others in whom the incidence of salmon poisoning showed high. Due, however, to the extremely short fishing season in the Bristol Bay section of Alaska, together with the lack of cooperative spirit displayed toward this contemplated undertaking by employer and employees alike, only a few actual tests of this nature were made. But, as the result of these, there is sound reason to venture the opinion that the primary basic etiologic factor causing salmon poisoning consists of hypersensitiveness to this slime in certain persons.

Moreover, there is reason for believing that the edematous condition produced by prolonged immersion of the hands and forearms in cold salt and brackish water greatly augments the production of this hypersensitivity. Furthermore, this edematous state, by producing a temporary local circulatory derangement, prepares the soil for easy bacterial infection as a secondary complication factor. Finally, a sample of the preserved slime, tested after being brought to the states, gave a positive reaction for proteins by both the Liebermann and the Acree methods.

The gross pathology of this syndrome in uncomplicated cases consists of a cellulitislike area which may involve only a part of a single finger or extend to the entire hand and up the forearm. It presents the characteristic trio of tumor, rubor and dolor. Systemic reactions in no uncomplicated case present any of the signs of severe constitutional allergic reactions. It is a chemically produced cellulitis.

Symptomatically, salmon poisoning is characterized objectively by localized swelling and redness. Subjectively the chief complaint is pain which, depending upon the exact areas involved, seems in the main to consist of pressure pain. Some degree of elevated temperature accompanies even those cases entirely uncomplicated by infection. In addition to these, in many cases psychic manifestations arise which are likely to prove troublesome. Fisher folk are inclined to be superstitious and the purely psychic symptoms associated with many cases of the affliction are due to the dread these people have acquired of the condition as the result of gruesome tales of the sufferings and fate of others who allegedly had either been permanently maimed or were supposed to have died therefrom.

From the standpoint of remedial therapy the outlines advised for the treatment of cellulitis in general are applicable. In harmony with the basic etiologic factor, as herein expressed, prolonged soaking of the parts in a strongly hypertonic solution of magnesium sulphate materially aids in diluting the irritating proteins and at the same time tends to relieve pressure pains by virtue of its hygroscopic action. Sulfanilamide, the only available sulfa drug at the time, failed to influence favorably the condition in the experience of these limited observations.

Much might be accomplished by prophylactic therapy, if and when the employer has been properly educated and the employees become more cooperative. At my station, as well as at five others I investigated from this standpoint, fishermen were furnished with aqueous, mild solutions of glycerin and phenol or lysol with instructions to use them for prophylactic purpose. These seem to be stereotyped, "hand-me-down" formulas, from which station physicians had no authority to deviate, notwithstanding their inefficiency to prevent the incidence of the conditions in those employees exposed to it.

If my conception of the etiology and pathology of this syndrome has any basis at all, logic and reason would suggest that no water-soluble substance or solution can form the best possible prophylactic therapy for this condition. Indeed, so strong was my conviction of the illogic in using watery solutions for prophylactic therapy, that I encouraged the use of substances which tended to make the skin less permeable to water and water-soluble substances. Petrolatum, to which a little tannic acid dissolved in glycerin was added for its possible astringent action, was the only substance available at my station. Due to stereotyped orders, this prophylactic could not be given to fishermen on a large scale, but those feeding the fish into the decapitating machines, as well as those engaged in sliming the fish, I urged to anoint their hands and forearms daily before they began work. Purely for psychologic reasons I added just enough menthol to give odor in order to get better cooperation from the Filipino workers. Not a single case of salmon poisoning developed among these after this mtehod of prophylaxis was instituted.

CONCLUSIONS

There is every reason to believe that the syndrome known to the laity engaged in the salmon fishing industry as salmon poisoning may be caused by hypersensitivity to salmon slime, and this hypersensitivity is predicated upon prior prolonged immersion in cold salt water.

That this etiologic basic factor, together with the edematous condition produced by prolonged salt water immersion, prepares the tissues for easy bacteriologic invasion as a complicating factor.

Prophylactic therapy, based on rationalism instead of empiricism, produced excellent results in a small group of employees who cooperated in its conscientious application.

RELATION OF TEETH TO INFLAMMATION OF THE EYES

Grant Balding, M.D.
BOISE, IDA.

A relationship between oral sepsis and ocular diseases has long been recognized. The first reference to the association of ocular and dental disease was a very ancient one made somewhere around 2000 B. C. by Hammurabi in his "Table on Diseases." It was not until the latter part of the eighteenth century that mention was made again in literature of their connection.

In fact, it was only after the advent of roentgen ray as a means of diagnosis that real progress was made in this respect. In searching for foci of infection affecting the eye, teeth are usually given first consideration today. A healthy and apparently normal tooth, as far as external appearances are concerned, may be found to produce diseases of the eye, if a roentgenogram is made.

This may disclose pulpless teeth with chronic periapical infection, pyorrhea alveolaris with pockets surrounding partially erupted teeth and chronic pulp infection in vital teeth. In addition to the other dental pathology responsible for eye diseases, we find impacted teeth and septic broken roots as chief causes; also pulp stones, degenerated pulp and residual alveolar infection remaining following extraction, as lesser causes. We may have eye disease with dental pathology not as a sole but as a contributory cause.

Pulpless teeth which were radiographically negative have been extracted from all parts of the mouth and their bacteriology studied. Articles on ocular diseases caused by dental infection appeared as far back as 1839, and served to establish the recognized clinical association between diseases of the teeth and eye (Black[1]).

Medical literature is replete with experimental investigations concerning the production of iritis by administration of various bacterial agents obtained from multiple body foci, through various routes of administration. Most experimental workers have allied themselves with the theory of Rosenow[2], that bacteria have a specific tendency to localize in certain tissues of the body, dependent on some peculiar, inherent property, and based their studies on this concept.

In attempting to elucidate the possible etiologic role of dental sepsis in production of iritis, cog-

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1. Black, A. D.: Ocular Disease Resulting from Dental Lesions. Ophth. Rec., 24:610-622, 1915.
2. Rosenow, E. C.: Iritis and other Ocular Lesions on Intravenous Injection of Streptococci. J. Infect. Dis., 403-407, 1915.

nizance must be given the many difficulties encountered. Acute inflammation caused by injection of a moderately heavy suspension of bacteria locally may result in panophthalmitis with destruction of the eye. Some animals used in the study acquired septicemia and died during experimental operation (Siniscal[3]).

The bacteria themselves, it was found, are markedly sensitive to oxygen, so that growth during culture occurred only under conditions of reduced oxygen tension. In some instances aerobic cultivation tends to destroy the characteristics of the organism for elective localization. Not all dental sepsis foci yield microorganisms which have elective localizing power (Rosenow[4]).

Rosenow stated that not every streptococcus has a predilection for the eye. Moreover, he expressed the opinion that prolonged contact of bacteria with leukocytes in the pus and high oxygen tension in the mucus on the surface of the mucus membranes appear to reduce the invasive powers of the bacteria[5].

The length of existence of the bacteria in the host must also be considered. In man it must be assumed that these bacteria were present in the mouth for months and even years, the iris thus being subject to their influence over a long period of stimulation. Finally, it must be remembered that the degree of virulence and ability to invade tissues will vary under changed conditions of habitat. Other factors of importance play a role, such as generalized or lowered local resistance of the host. Severe or repeated injuries and sensitization of the tissues are to be given consideration.

Other pioneers in this field were Irons and Brown[6], who observed a series of one hundred cases of iritis in which they considered dental sepsis a definite factor of importance. In 1923, they observed a second series of one hundred cases in which they attached importance to the role of dental infections (Narreau[7]).

That a rather definite correlation exists between iritis and dental sepsis would seem to follow, when the curative effects following removal of dental foci have been noted. Extraction of infected teeth in some instances with curettage of the alveolar socket from remnants of septic material resulted in steady improvement in the eye. The reason why no improvement has seemed to follow the removal of a septic tooth or a number of such teeth in some instances may have been that there was an incomplete evacuation of all the diseased tissue. Some observers have called attention to this fact and have reported several cases of iritis in which, though there was no improvement after dental extraction, decided improvement occurred on curettage of the alveolar sockets containing such areas.

From the viewpoint of dental pathology, the ocular diseases which result from dental lesions are of two groups: (1) reflex neuroses presenting as sensory, vasomotor or muscular disorders; (2) inflammations of eye tissues due to infection. The former are most always due to irritation of a vital pulp tooth, although an occasional case may come from an impacted tooth, the latter practically always due to an infection involving the peridental membrane, either in the form of alveolar abscess at the root of the apex or a pus pocket alongside of the root. Here we may get amblyopia without visible fundus changes, external eye muscle paralyses, blepharospasm, mydriasis, neuralgia and disturbance of color vision. As probably not less than fifty per cent of all persons having teeth present one of these conditions, the mouth is doubtless the most frequent offender in cases of secondary eye lesions (Black[8]).

When eye symptoms are of toxic or infective nature, the condition of the peridental membrane should be investigated in searching for a cause in the mouth. There are two distinct pathologic processes which involve the peridental membrane: (1) alveolar abscess which always occurs subsequent to the death of the pulp and necessarily involves the tissue about the apex of the root; (2) chronic suppurative pericementitis, generally known as pyorrhea, which always begins at the gingival margins and very gradually involves and cuts away the peridental membrane from the root, forming a pus pocket.

An alveolar abscess will generally become chronic if the tooth does not receive prompt treatment, and the chronic abscess gradually destroys the peridental membrane around the apex of the root, also the bone in the immediate vicinity. Such an abscess may form a sinus which usually discharges through the gum, or it may remain as a blind abscess without sinus.

The inflammatory and degenerative changes, which are definite organic lesions of the eye tissues, occur in the following manner: (1) metastatic bacterial invasion, (2) toxemia resulting from disintegration of the microorganisms themselves or of their capsular envelopments through the blood stream, (3) direct extension from the infected teeth to the orbit, (4) direct transference from the mouth to the eye, usually by the fingers, (5) infection through the intestinal tract from material swallowed, (6) extension of the virus along the nerves from the first to the second branch of the trigeminal, as in the case of herpes of the cornea, (7) local manifestation of an allergic reaction, and (8) transmission along the lymphatics.

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[3] Siniscal, A. A.: Iritis Due to Bacteria and Bacterial Toxins Associated with Dental Sepsis. Arch Ophth.

[4] Rosenow, E. C.: Results of Experimental Studies in Focal Infection and Elective Localization. M. Clinics N. America, 5:573, Sept., 1921.

[5] Rosenow, E. C.: Pathogeneses of Focal Infection. J. Am. Dent., A5:133, 1918.

[6] Irons, E. E. and Brown, E. V. L.: Etiology of Iritis. J.A.M.A., 81:1770-1776, Nov. 24, 1923.

[7] Narreau, O. F.: Relation of Dental Infection to Eye Conditions. Dental Items of Interest, 17:403-407, 1915.

[8] Black, A. D.: Ed. Operative Dentistry with which Dental Pathology Is Combined. Vol. 4, Chicago, Medico-Dental Pub. Co., 1936.

Infections of the peridental membrane occupy a peculiar place in pathology because of the unusual makeup of the tissue. The dentin which forms the bulk of the root of the tooth, is covered with a layer of cementum, which corresponds in many respects to bone. The periosteum which lines the bone of the alveolar socket and the cementum covering the root are connected by many bundles of fibres of the peridental membrane, the ends of which are inbedded in the periosteum and the cementum. The function of these fibres is to hold the tooth in position and cushion it against the force of mastication. Lying on the surface of the cementum, betwen the ends of these fibres, is a layer of cementoblasts, which correspond to the osteoblasts of the periosteum, and their functions are similar.

The important difference between the two tissues is that the cementum does not have a blood supply corresponding to that in bone, nor does it have Haversian systems. If it were not for this difference, we might expect the same response and the same processes of repair in cementum which occur in bone as a result of periosteal inflammation. If the periosteum is stripped from the bone, this may become necrosed, in which case the activity of the cells within the bone will separate the necrosed area and exfoliate it.

Similar changes cannot take place in the cementum because of lack of circulation of the blood. When the peridental membrane is stripped from the cementum by suppuration, the cementum becomes a dead tissue which cannot be exfoliated except in its entirety by removal of the tooth. It is sufficiently porous to become saturated with the products of suppuration, and remains as a constant irritant to overlying tissue.

There is then a condition similar to a necrosed bone continuously held in position. All investing tissues of teeth, peridental membrane and fibres, and bone of the alveolar process must be considered as tooth appendages, since they develop with the tooth and always appear subsequent to extraction. Likewise, when there is a suppurative detachment of the peridental membrane from the cementum, the fibres of the membrane and the alveolar process corresponding to the area of detachment are absorbed. This means that all suppurative detachments are permanent, that a lesion is established which cannot heal.

Chronic suppuration cuts away the tissue from the very surface of the root, no soft tissue remaining attached. The bone of the alveolus is practically never laid bare in chronic pericementitis, but is covered by the soft tissue membrane which presents a granulating surface to the root, an excellent opportunity for infective agents to enter the circulation.

Considering various portions of the eye which may be affected by dental sepsis, Whitehead[9] mentions all, the contributing factor being lowering of general health. Ocular muscles are just as sensitive to lowered vitality as muscles of the arms and legs. The asthenopias may be thus explained.

We might group the possibilities as follows: (1) lids:ptosis, inflammatory, edema, chemosis, gland infection; (2) lacrimal apparatus:dacryocystitis; (3) conjunctiva:infection, edema; (4) cornea: phylctenular and herpetiform keratitis; (5) sclera: scleritis, transient, superficial, deep; (6) uveal tract:iritis, cyclitis, choroiditis focal or diffuse; (7) lens:perinuclear and toxic opacities; (8) retinal vessels:embolism, thrombosis, hemorrhages; (9) retina and optic nerve:retinitis, papillitis, papilledema; (10) glaucoma:precipitation of acute attack, and aggravation of preexisting, simple, and inflammatory; (11) ocular muscles:impaired motility, paresis; (12) globe:endophthalmitis, panophthalmitis; (13) orbit:abscess with exophthalmus, orbital vein and secondary sinus thrombosis.

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[9] Whitehead, A. L.: Dental Sepsis and Diseases of the Eye. British Dent. J., 47:729-738, July 1, 1926.

PRONUNCIATION OF SULFANILAMIDE

The recommendation of the Committee on Nomenclature of the Council on Pharmacy and Chemistry of the American Medical Association regarding the pronunciation of the words amide, sulfanilamide and sulfathiazole has been accepted by the Council, it reports in *The Journal* of the Association for January 31.

The Council reports that "the committee recommended that the word amide be pronounced with a long 'i' (amide), this being preferable both because of the final e and the analogy with chloride and iodide. For the same reason the committee held that the preferred pronunciation of sulfanilamide should be sulfanilamide with the major accent on the antepenultimate syllable, il′.

"In agreement with the principle that English accentuation is recessive, it is believed that the preferred accent would be on the syllable thi in sulfathiazole."

POSTGRADUATE LECTURES

Postgraduate courses of lectures are scheduled each year for the profession in our three states. It has been customary to list them in this journal under ehadings and dates as they occur from month to month. In this issue notice is given of those which have been received for publication.

OREGON

Sommer Memorial Lectures
University of Oregon Medical School
March 23-25
Guest Speakers:
Harvey B. Stone, Associate Professor of Surgery at Johns Hopkins, Baltimore
George W. Holmes, Roentgenologist at Masachusetts General Hospital, Boston.

University Oregon Medical School
Alumni Association Annual Meeting
Portland, March 23-28

General Postgraduate Session
Portland Academy of Medicine
April 13-15

American College of Surgeons Sectional Meeting
Portland, April 27-30

Pacific Coast Oto-Ophthalmological Society
President, Ralph A. Fenton, Portland
Secretary, C. Allen Dickey, San Francisco
Portland, May 11-14

Pacific Northwest Medical Association
Portland, June 17-20

WASHINGTON

Puget Sound Surgical Society
Seattle, March 14

Puget Sound Surgical Society will hold its annual meeting in Seattle, March 14, at Rainier Club with clinics at King County Hospital.

Guest speaker will be Louis P. Gambee, Associate Clinical Professor of Surgery, University of Oregon Medical School. At the annual dinner Dr. Gambee will deliver an address on "Abdominal Distension."

Postgraduate Chest Conference
College Club, Seattle
March 16-17.

Guest Speaker: Harold Trimble, M.D.,
President of California Tuberculosis Association.
Lectures: *"The Growing Problem of Carcinoma of the Lung"*
"Chest Diseases of the Aged."

Other courses of lectures not specified heerin are solicited for the purpose of featuring them from month to month. More detailed information will be included for each one if the data are received for that purpose. Fhis form of publicity will depend upon the attention of those sufficiently interested to forward the information.

Tacoma Surgical Club
April 11

The annual meeting of Tacoma Surgical Club will present anatomical and surgical demonstration; symposia on fractures, shock, management of gas casualties.

Guest Speaker: Leo Eloesser, M.D.,
Professor of Surgery, Stanford University
Lectures: *"Fractures in War Time*
"Trauma to Lung and Chest"

Spokane Surgical Society

The annual meeting of Spokane Surgical Society will be held in Davenport Hotel, Spokane, April 25. Richard B. Cattell of the Lahey Clinic will be the guest speaker.

Dr. Cattell will deliver lectures on the following subjects: "Diseases of the Thyroid Gland," "Common Duct Obstructions," "Selection of Operation for Carcinoma of Colon and Rectum."

IDAHO

The fiftieth annual meeting of Idaho State Medical Association will be held at Sun Valley September 16-19. The program for this meeting will consist of postgraduate lectures. The lecturers will come from the faculty of University of Oregon Medical School.

DOCTORS FOR PANAMA CANAL ZONE

The United States Civil Service Commission makes an appeal for doctors for service at Panama Canal, where there is urgent need for them. Panama Canal is one of the nation's most vital defense areas, and here is a splendid opportunity for doctors to assist their country during the present emergency.

Applicants must have graduated from a Class A medical school subsequent to May 1, 1920, and must have had at least one year's hospital experience since graduation. Applicants must not be over fifty years of age. Those between twenty-five and thirty-five years of age are preferred. They must be in sound physical health and capable of arduous work. Physical requirements are not as rigid as for the army or navy service.

Entrance salary is $4,000 per year, with free transportation from point of embarkation, salary beginning on the date of departure from the United States. There is no written test in examination. Further information with application forms may be obtained from any first or second class post office, or from the United States Civil Service Commission, Washington, D. C.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING
CORVALLIS, SEPT. 9-12, 1942

TO THE MEDICAL PROFESSION OF OREGON

Every physician should analyze his position carefully and sincerely. He should make an unprejudiced evaluation of his separate responsibilities and decide whether he is needed more at home or in the service of his country. If he decides he is needed in the armed service of his country, he should enlist immediately.

Every physician who is not in service now should register with the Procurement and Assignment Service for Physicians, thereby placing his service in the hands of the proper authorities, who can determine the national need for physicians and can place those available in the most advantageous positions either at home, in defense industry or in the armed forces.

W. W. BAUM, President.

ORGANIZATION ACTIVITIES

The Council of Oregon State Medical Society met February 7 in Portland. Among the many things discussed, the following seem noteworthy. A plan of prepaid medical care for "standard borrowers" of the Farm Security Administration in the Snake River Valley was approved, to be written through the O.P.S. This is a policy only for districts, in which the participating physicians request the service and consent to the terms.

The Agricultural Workers' Health Association submitted a fee schedule which met the fate of so many previous attempts to get a special schedule adopted; in other words, was not approved. The Council took steps to attempt to establish a state-wide fee schedule of its own which various agencies will be asked to adopt.

Mr. John Caughell, assistant executive secretary, was chosen to be the representative of the society at the "Conference on Medical Service Plans" held in Chicago February 14.

Announcement of the appointment of Mr. Willard Marshall as manager of the O. P. S. was made. Progress of the O. P. S. was discussed.

An informal conference of Pacific Coast Medical Executives was suggested for a later date. This would take the place of the same conference which was to be held in February, from which the Council withdrew because it was too formal and was assuming too political an aspect.

U. OF O. MEDICAL SCHOOL

War continues to take its toll in the faculty of University of Oregon Medical School. Already thirty doctors have joined the United States armed forces and sixty more are slated soon to join the 46th general hospital.

These ninety doctors represent approximately 39 per cent of the total faculty of 230, a large number when it is considered that the load of the faculty is constantly increasing under defense efforts to graduate a larger number of doctors in a shorter period of time than is customary.

Response to their nation's need has been voluntary on the part of these doctors. Most of them desert a private practice and to leave this clientele means considerable personal sacrifice.

As more doctors join the service, those left behind in Portland feel the extra burden. Before the war Portland had an average of one doctor to every 650 people, compared to the national average of one to every 760. Result is that doctors of the Rose City must serve even greater numbers of patients than they did in peace days.

The administration goes ahead with plans for the "condensed" instruction of students. Gone is summer vacation. New term will start June 22 and at this writing the problem of the student who usually earns tuition and maintenance money during summer holiday still remains a tough one. The school is still hopeful federal assistance will be forthcoming, similar to government aid extended in increasing the output of nurses. According to Associate Dean David W. E. Baird, 80 per cent of the student enrollment depends entirely or in part on money earned in summertime.

Some questions raised at the Oregon school since declaration of war include:

1. Will there be deferment of premedic students to insure the usual enrollment in medical colleges? The answer will be "yes." Major C. J. Parker, Jr., deputy director of the national selective service, advises Dr. Baird: "It is of paramount importance that the supply of students to medical schools be not only maintained, but encouraged to grow and that no student or interne who gives reasonable promise of becoming an acceptable medical doctor be called to military service before attaining that status." Selective Service Boards, which have the final say, are cooperating in the request to defer doctors-to-be.

2. Will arts colleges accelerate their programs so that entering clases in medical college will be of usual size? Fifteen Northwest colleges and universities, from which the Portland center obtains its students, have been contacted and in practically every instance have replied that they are arranging to speed up the premedical curriculum.

3. What will be the attitude of state licensing boards toward graduates and internes who have come through accelerated programs? This matter has been taken up with the Federation of State Boards by the committee of the Association of American Medical Colleges. A national policy is being worked out and probably a suitable change will be made to accommodate the medical student going through a streamlined course.

4. What financial help will be required for the depart-

ments in the medical schools to go on an accelerated program? Naturally it will require much more money to finance instruction, which heretofore has been on a nine month basis and which will be placed on a twelve month basis. And more materials and assistance will be needed each year. Meanwhile, plans for the annual general postgraduate session, given under auspices of the school and the alumni association, are going ahead full speed.

ALUMNI ASSOCIATION ANNUAL MEETING

Sommer Memorial Lectures

The session will open March 23 and continue through March 27. Highlight of the meeting will be the Ernst A. Sommer memorial lectures which were added to the postgraduate session program last year for the first time. This late Portland physician provided in his will a fund for bringing annually outstanding doctors of the nation to Oregon for lectures.

Two distinguished physicians and educators will give papers at this year's meeting. They are Harvey B. Stone, surgeon at Johns Hopkins, and George W. Holmes, radiologist at Massachusetts General Hospital in Boston.

Each will give three lectures. Dr. Stone will discuss "Surgical Treatment of Biliary Diseases," "Intestinal Obstruction" and "Surgery of the Colon."

Dr. Holmes will talk on "Irradiation in Treatment of Malignant Tumors," "Roentgen Diagnosis of Obstructive Bronchial Lesions," and "Recent Advances in Roentgen Diagnosis of Lesions of the Gastro-Intestinal Tract."

Refresher Courses

The five-day "refresher" courses will be similar to those in 1941. Lectures and clinics will be offered in medicine and pediatrics, surgery, obstetrics and gynecology, radiology, ear, nose, throat, eye and pathology. Some courses will run in two sections.

Under Medicine-Pediatrics are listed eleven clinics and discussions; under Surgery are nine; under Gynecology and Obstetrics, three; Radiology, four, and one each under Ear, Nose and Throat; Eye; Pathology.

BOARD OF MEDICAL EXAMINERS

Carl G. Patterson of Baker, veteran member of the Board, has just returned from Chicago, where on February 16 and 17 he attended the Annual Congress on Medical Education and Licensure of the Federation of State Medical Boards of the United States as a delegate from the Oregon Board. His report will be made at the next meeting of the Board which will be held April 7.

Included in the business of the Board at this next meeting will be the election of officers. Frank E. Fowler of Astoria is the incumbent president and L. S. Besson of Portland is the secretary-treasurer. Reciprocity applications will also be considered and it is called to the attention of prospective applicants that such applicants must appear before the Board for interview at the time of consideration of their applications, unless adequate explanation may be made upon which to base permission for interviews prior to the meeting. In no event will licenses be granted pending interviews.

It is announced that, as a result of the State Board examinations held in January at the University of Oregon Medical School Library, licenses to practice medicine and surgery have been issued to the following: Richard Lester Currin, Dolores C. DeFaccio, Palmer Reque Grorud, Robert Hayter, Charles Louis Kaufman, Robert William Marcum, Waldo Orrin Mills, Willard Charles Roley and Siegfried von Berthelsdorf.

The next examinations will be held at the Medical Library July 22-24, these dates being subject to change in order to meet the present military emergency.

STATE DEPARTMENT OF HEALTH

INCREASED WAR DEMANDS

Because civilian defense is a responsibility of government as well as of the citizens of this country, it may be well to highlight certain activities relative to the war effort insofar as they have concerned the State Department of Health. These activities are in addition to the normal activities of the department.

Phenomenally increased demands for issuance of certified copies of birth certificates continue to be made upon the Division of Vital Statistics of the department. Additional staff has been added. Quarters for the division have been remodeled and expanded. Reassignment of responsibilities within the division has been effected. New additional equipment has been added. Assembly line procedures have been effected. Those not requiring certified copies of birth certificates have been advised to postpone their requests at this time.

Considerable attention has been given to surveying public water supplies, particularly on the west side of the state. The purpose of the survey has been to determine what safeguards to such water supplies have been effected, and what remain to be taken. Specific recommendations have been made. These are based upon the English experience.

Emergency Medical Service preparations of cities and counties, particularly those west of the Cascades, have been studied further. District meetings have been held for the purpose of perfecting these preparations. Reports of practice drills have been studied. Recommendations have been made.

While much has been acomplished relative to Emergency Medical Service preparation, every area in the raid zone needs further improvement. The most outstanding deficiency is the lack of sufficient practice drills, careful observation of same, and the proper thorough analysis of those observations.

SOCIETY MEETINGS

CENTRAL WILLAMETTE MEDICAL SOCIETY

The regular monthly meeting of Central Willamette Medical Society met in Eugene February 5. A panel discussion on "Fractures of the Hip Joint" was led by Otis Akin, Joe B. Davis and Gurney Kimberley of Portland.

CLACKAMAS COUNTY MEDICAL SOCIETY

The annual meeting of Clackamas County Medical Society was held at Oregon City January 30. Reports for the year were given. There was considerable discussion concerning the County Health work and the Defense work for the coming year.

The election of officers for 1942 were as follows: President, J. P. Cleland; Vice-President, Dan Trullinger; Secretary-Treasurer, W. Ross Eaton (re-elected), all of Oregon City.

CLATSOP COUNTY MEDICAL SOCIETY

President W. W. Baum addressed the Clatsop County Medical Society on February 20 in Astoria. His topic was "Policies and Activities of the O. S. M. S." C. P. Wilson discussed the opportunities available to Oregon physicians in postgraduate education.

JACKSON COUNTY MEDICAL SOCIETY

A business meeting of Jackson County Medical Society was held in Ashland on February 11. E. A. Woods was host.

JOSEPHINE COUNTY MEDICAL SOCIETY

Josephine County Medical Society met in Grants Pass February 5 and was addressed by A. C. Jones of Portland. The subject of Dr. Jones' talk was "Physiotherapy for the General Practitioner."

LANE COUNTY MEDICAL SOCIETY

Lane County Medical Society met in Eugene February 27 and was shown a program of moving pictures of medical subjects by Drs. Neal and Norton.

LINN COUNTY MEDICAL SOCIETY

The monthly business meeting of Linn County Medical Society was held in Lebanon February 13. In addition, A. E. Bostrom, county health officer, spoke on some pertinent health matters.

MULTNOMAH COUNTY MEDICAL SOCIETY

On February 4, Multnomah County Medical Society was addressed by Drs. Gius, Schauffler and Holman. Dr. Gius gave a brief historical account of the life and work of Bilroth. Dr. Schauffler spoke on "Pediatric Gynecology" and Dr. Holman on "Chorionic Epithelioma and Hydatidiform Mole."

UMATILLA COUNTY MEDICAL SOCIETY

Umatilla County Medical Society held its regular monthly meeting at Pendleton Tuesday, February 10, and varied its usual procedure somewhat by having the group meet with the staff of the Eastern Oregon State Hospital at that institution.

Following the regular business meeting and discussion of emergency committee plans, a clinic on several common neurologic conditions was presented by the staff of physicians. Dr. Wair, superintendent of the hospital, prefaced the clinic with presentation of the financial stringencies under which Oregon institutions, partcularly the Eastern Oregon State Hospital, are operating. E. I. Silk presented an interesting discussion on the subject of "Huntington's Chorea"; D. Q. Thompson presented a paper on "Multiple Sclerosis," and T. M. Barber presented a paper on "Post-encephalitis."

CLINICAL FORUM

PEDIATRIC PROBLEM

C. M. age 10 months. First seen in the office and sent to the hospital the same day. Complaint was continued pallor and recurrent spells of temperature during the past month. Most recent attack came up abruptly two days ago.

History. First illness thirty days ago; fever with "bronchial trouble," coughing, wheezing and decided hoarseness. The attack at that time was considered bronchopneumonia. Has not been really well since then. Recurrent temperature at times. Two days ago was taken to local physician who found hemoglobin "too low to read," r.b.c. of "one million" and referred the case.

General History. Third child, the previous two being twins, born four and a half years before; a boy, who died in twenty-four hours, and a girl now living who also displays some pallor. Mother has had a "life-long" pallor (has an enlarged spleem and five years ago refused prescribed splenectomy). Normal pregnancy and delivery, breast fed ten days. Is now taking whole boiled milk 40 oz. and brown Karo 3 tsp., 5 feedings; also vegetables and pablum. Has taken practically no orange juice but took tomato juice about once daily until three weeks ago. Has had no c.l.c., no meat or liver. Egg yolk upsets him, making him vomit for two or three feedings following its use.

He seemed fat before this illness, and until recently has seemed to be a healthy baby except for persistent pallor even before the illness one month ago, which was never really diagnosed.

Physical Examination. A slender, exceedingly pale, flabby, moribund baby who is whining with every breath. Mucous membranes nearly white, eight teeth, throat pale. Upper right chest is dull on percussion and filled with mucous rales. The heart is rapid and rather feeble. No materially hypertrophied glands except the spleen which extends to the brim of the pelvis, and the liver which extends about 4 cm. below costal margin. There is very limited subcutaneous fat and poor muscle tone. The baby is very materially undernourished. Temperature 104° rectally.

Child was hospitalized, found to have a superimposed bronchopneumonia which cleared up in less than a week.

Hospital blood count on admission: r.b.c 910,000; w.b.c. 51,150; hemoglobin "too low to estimate" (by Dare method). Polys. 27, s.l. 58, myelocytes 15. Ten normoblasts and fifteen megalocytes were found, with poikilocytes, nacrocytes, microcytes and polychromatocytes.

Next day, r.b.c. 880,000; w.b.c. 73,800; polys. 58; s.l. 31; eas. 2; bas. 3; myelocytes 16.

Three days later, r.b.c. 710,000; w.b.c. 28,750; polys. 55; s.l. 32; l.m. 3; myelocytes 10.

Fragility test on two separate occasions showed hemolysis in all twelve tubes.

What is your diagnosis and what procedure would you recommend?

COMMENTS ON OBSTETRIC PROBLEM IN FEBRUARY ISSUE

First commentator believes: The proper treatment for this obstetric case should have been the so-called Porro cesarean section, which is followed by hysterectomy. The classic cesarean section should be used because it is quicker. If the uterus is going to be removed, there is no advantage in any other technic. The doctor who conducted this case probably lacked adequate assistance and under these circumstances his treatment was correct.

If I were called in consultation and found the patient in deep coma, membranes ruptured and cervix three and a half fingers dilated, pains irregular, and fetal heart tones irregular, my first thought would be, "what is the quickest way to deliver this baby before it dies?" The answer would probably be by manual dilatation of cervix, version and extraction. If the patient has a profuse hemorrhage, following this maneuver, so much the better, for it will rid the blood of some of the toxin.

If the patient lost little blood, I should perform venesection after delivery. If preparations were completed when I

(*Continued on Page* 110)

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SPOKANE, AUG. 17-19, 1942

U. S. MILITARY GENERAL HOSPITAL No. 50, SEATTLE COLLEGE UNIT

During World War I Base Hospital No. 50 served effectively and with honor under the direction of Dr. James B. Eagleson, with rank of Lieutenant Colonel. At present the hospital unit is being organized as U. S. Military General Hospital No. 50, Seattle College Unit, under direction of R. T. Buckner, with rank of Lieutenant Colonel. The unit will have a total strength of 693, sufficient to man a 1000-bed hospital. Its staff of officers will include forty-eight physicians, seven dentists and nine members of the Medical Administrative Reserve Corps, the large majority of whom are from Seattle.

The personnel of the staff is herewith presented, all members of whom are from Seattle unless otherwise designated. Dr. Buckner, in command of the unit, has rank of Lieutenant Colonel. R. L. Zech, chief of the surgical service, will have the same rank. Recommended for commissions under him are the following for the surgical service:

Majors: David Metheny, D. G. Leavitt, R. D. McClure (Yakima), C. Q. North, H. B. Kellogg and E. B. Speir.
Captains: E. F. Case, J. M. Shiach, E. G. Dorland, J. F. Blackman, E. E. Wise, B. E. McConville, J. B. Porter (Port Orchard), C. W. Spellman and S. J. Minkove.
First Lieutenants: O. C. Kroger (Chehalis), H. S. Westover, W. E. Smick and M. L. Schoolnik.

For chief of medical service has been recommended J. K. Martin, with rank of Lieutenant Colonel. To serve under him are recommended the following:

Majors: R. F. Foster, E. J. Fairbourn (Tacoma), N. K. Rickles, J. W. McDowell, K. K. Sherwood and P. H. Narodick.
Captains: J. A. McDermott, F. Lemere, C. T. Noonan, A. B. Kraabel, J. D. Collins, J. H. Low (Yakima), Ole Slind, S. M. Billington and R. E. Seth.
First Lieutenants: G. E. Marcy, R. Florence, P. N. Hogue and C. E. Russell.

For the X-ray service there have been recommended H. V. Hartzell, with rank of Major, H. E. Emmel as Captain and R. C. Corkle as First Lieutenant.

For laboratory service C. P. Larson (Tacoma) has been recommended as Major, D. J. MacDonald (Billings, Mont.) as Captain and C. A. DeLature as First Lieutenant.

The dental service will be under the direction of D. F. Dourassa, with rank of Major. Serving under him will be the following:

Captains: N. H. Ingram, F. C. Morse and R. H. Carle.
First Lieutenants: M. G. Miska, G. D. Dore and E. R. Eckhart.

J. H. Lasater, Jr., has been selected as adjutant, with the rank of Captain.

The Medical Administrative Reserve Corps will have the following laymen personnel:

Majors: Arthur Anderson, J. G. Daniels, L. O. Thompson and Howard Williams.
Captains: H. P. Gilham and M. O. Nelson.
Second Lieutenants: C. A. Jackson, C. C. Cullen and W. J. Fry.

From the personnel of Base Hospital No. 50, Eagleson Unit, which served in France during 1918, there will be two men in this new hospital unit. They are Lieutenant Colonel H. T. Buckner in charge of the unit and Major L. O. Thompson of the Medical Administrative Corps.

The nurses' staff will be in charge of a head nurse selected by Seattle College. She will enroll her nurses through the Red Cross Reserve. All nurses must be under forty years of age and unmarried.

MEDICAL OFFICERS WAR FUND

Adopted by Spokane and King County Medical Societies

The object of this is to pay to the families of certain members who enter the Army, Navy or Marine service a certain sum of money. The first object is to see that all who enter get a pay equal to that of a Captain in the Army. If a member enlists as a First Lieutenant, the fund pays him the difference between First Lieutenant's and Captain's pay. This applies to a married man or to a single man who has obligations beyond his ability to pay on a salary of a First Lieutenant. Each case is to be investigated by the Committee in charge.

The Committee is composed of three men. They, in conjunction with the trustees of the County Medical Society, are to consider each enlistee's finances and obligations. If an enlistee is very well fixed financially, he is not to be compensated.

If an enlistee has a rank of Captain but has obligations that his Captain's pay will not cover, his case is to be considered and he is to receive an amount decided upon by the Committee and County Society Trustees. For instance, if an enlistee has a very substantial income from his practice and carries insurance that his Captain's pay will not enable him to keep up, or if he is paying a certain amount on a house each month that cannot be met by his Captain's pay, his case is to be considered by the Committee and society trustees.

If he is carrying an excessive or unusual amount of insurance, the Committee and Trustees would in all probability not feel justified in financing all of that. They might advise a readjustment of his insurance carriage or, if the funds are sufficient, they might make him a loan of a certain amount and at the same time have the enlistee sign a paper insuring the payment back to the Fund of the amount of the loan from the insurance money in case of death. Another object of this Fund, if it is sufficient, is to help the doctor get started again after the war is over, if he is broke and needs some aid to establish an office again.

This Fund is raised as follows: The Chairman of the Committee selects about 15 doctors and to each of them are assigned 10 or 15 members of the County Society to contact. Each society member is rated, according to the amount he can pay each month. None are asked for less than $10 or more than $25 per month.

Those who were members of the Medical Service Bureau were asked to sign: first, that they would give so much each month; and, second, the Bureau management was instructed to keep that amount out of his check each month and turn it over to the Committee. Nearly everyone preferred to pay it that way. Those who are not members of the Bureau sign up to mail the check each month. The arrangement of having the Bureau deduct the agreed amount each month has the advantage of insuring prompt payments and less bookkeeping.

The payments to the enlisted men in Spokane Society are to start with this January and are not to be retroactive. In other words, those who have been in the service the past year will not participate prior to January, 1942.

Spokane expects to raise between $2,000 to $2,500 per month. As time goes on and more enter the service, the income will be less as the contribution of each enlistee will stop so a surplus at first is desired. Spokane had some such arrangement during the last war.

RANK AND RATE OF PAY OF U. S. ARMY AND NAVY OFFICERS

			Allowances			
			With Dependents		*Without Dependents*	
Comparison Grades	*Annual Base Pay*	*Pay Monthly*	*Rental*	*Subsistence*	*Rental*	*Subsistence*
Captain (Navy)	$4000	$333.33	$120	$36	$80	$18
Colonel (Army)	4000	333.33	120	36	80	18
Commander (Navy)	3500	291.67	120	54	80	18
Lt. Colonel (Army)	3500	291.67	120	54	80	18
Lt. Commander (N)	3000	250.00	100	54	60	18
Major (Army)	3000	250.00	100	54	60	18
Lieutenant (Navy)....	2400	200.00	80	36	60	18
Captain (Army)	2400	200.00	80	36	60	18
Lieut. J. G. (Navy)	2000	166.67	60	36	40	18
First Lieut. (Army)	2000	166.67	60	36	40	18
Ensign (Navy)	1500	125.00	40	18	40	18
2nd Lieut. (Army)....	1500	125.00	40	18	40	18

Note: Officers *without dependents,* while quartered on Army posts or Naval ships or stations, do not receive "rental" allowance but get subsistence allowance.

Officers *with dependents* get rental and subsistence allowance regardless where stationed.

INITIATIVE NO. 151

When Initiative No. 141, known as the Senior Citizens' Grants Act, was issued in pamphlet form by the Secretary of State to all voters, few people read the act but approved it by a majority vote of more than one hundred thousand with the belief that they were voting only for an old-age pension. Few physicians, for instance, realized the provisions as set forth in Section 15 which called for extensive medical care.

When William A. Pennock, secretary of the Old Age Pension Union, and Floyd Oles, manager of the Washington State Taxpayers Association, presented arguments for and against the measure in the printed pamphlet, neither of them mentioned Section 15, yet this section caused $5,320,000 to be levied by the state legislature to carry out its provisions.

Now comes Initiative No. 151 which hopes to replace Initiative No. 141 but with broader powers and coverage. The law requires that an initiative must be enacted every two years and, unless done so by petition, the legislature then has the power over that law.

The promoters of the new initiative (151) are the same group who promoted and sponsored Initiative No. 141. The procedure calls for the filing of the new law with the Secretary of State who issues a number to the initiative. The promoters must thereafter obtain (in this instance) 50,000 bona fide signatures of registered voters in the state, these signatures to be filed with the Secretary of State not later than 4:00 o'clock p.m., July 3. Experience has shown that there is an approximate 18 per cent shrinkage and that between 65,000 and 70,000 signatures are necessary to make 50,000 "good" signatures. The promoters should have little difficulty in obtaining the required signatures, when it is known that about 62,000 old age pensioners are now participating in the benefits of the present law.

The people and the physicians of the state should be disturbed, however, when they analyze the provisions set forth in the new initiative. Under Section 15, subsection (a) an all-out medical care provision is extended to dependents of recipients, which, of course, could take in the entire family and relatives.

Again, under Section 15, subsection (b), item 5 states: "(5) Provision for special or supplemental diets as prescribed by applicant's doctor;" and

"(6) Such additional care and services as may be necessary to maintain or restore applicant's physical and mental health."

A breakdown of these two items alone would indicate that a "doctor" could write prescriptions for everything on the grocery shelf, not only for old age pensioners but for their dependents as well.

The far reaching provisions of this new initiative are so drastic and fearful that it behooves every ethical physician, dentist and their friends and allies to fight it. It is socialized medicine to its very core.

Its cost? No one knows. It may run into one hundred and fifty or two hundred millions of dollars.

The Public Relations Committee of Washington State Medical Association will issue, in due time, a complete breakdown of the proposed new law and its possible consequences in terms of medical care and estimated costs to the people of the state. In the meantime, it is suggested that all physicians read and study Section 15 of Initiative No. 151:

Section 15. Additional Care

(a) The Department shall provide for each person eligible to receive a senior citizen grant, blind aid grant, child welfare grant, public or general assistance grant, or any other form of public aid or assistance administered by or under the supervision of the Department, and to each person dependent upon such grant, aid or assistance, or as a dependent of a recipient, or otherwise, medical, dental and other services and care necessary for health.

(b) The services and care provided for in this section shall include:

(1) Medical care by a doctor of applicant's choice.

(2) Dental care and appliances by a dentist of applicant's choice.

(3) Optical care of applicant's choice, nursing care in the applicant's home, hospitalization and ambulance service.

(4) Provision for medicine, drugs, medical and pharmaceutical supplies, artificial limbs, hearing aids, and other needed appliances, without cost to applicant.

(5) Provision for special or supplemental diets as prescribed by applicant's doctor.

(6) Such additional care and services as may be necessary

to maintain or restore applicant's physical and mental health.

(c) The care and services provided for in this section shall be in addition to, and not in lieu of, any grant, aid or assistance to which applicant is entitled, and in no case shall deduction be made from any grant, aid or other assistance to which applicant is otherwise entitled by reason of any grant, services or care provided for in this section.

MEDICAL NOTES

Official Appointments. Francis J. Dwyer of Longview has been appointed county physician for Cowlitz County to succeed W. A. Johnson. Dr. Johnson expects to enter private practice in Longview. Clallam County commissioners have appointed Emil Palmquist as county city health officer. He replaces A. E. Eyres who recently resigned to enter hospital work in the East. R. S. Hamilton is temporarily in charge of the office until Dr. Palmquist assumes duty. Philip J. Holabach has been named permanent head of the Whitman County Health Department. He was acting head during the leave of absence of E. E. Palmquist who has now resigned to accept the Clallam County post. Another change in Whitman County will eliminate the infirmary department of the county farm by uniting the county hospital and farm into one institution. It is expected that the operation as a single institution will save approximately $1,500 per year.

Pay Boost at King County Hospital. Six hundred seventy-three employees of King County Hospital and Morningside Tuberculosis Hospital were recently given an increase in wages by adopting a new minimum of $125 per month. This applies to both men and women. Some increase in salary has already been granted by eliminating board and room for employees and providing cash instead.

Public Health Association to Meet. Western branch of the American Public Health Association will meet in the Olympic Hotel, Seattle, May 26 to 29. Donald G. Evans, director of the Washington State Department of Health, will be installed as president of the Western branch at the meeting. Theme of the meeting will be "Public Health in a Nation at War."

Physiotherapy Pool Dedicated. A new physiotherapy pool at Pierce County Hospital was dedicated January 22. The $15,000 pool is well equipped for physiotherapy use.

Hospital Campaign Supported. A move to raise $15,000 for a hospital at Ritzville has received much popular support. By mid-February the major amount had been pledged, and there is little doubt that the entire amount will be raised easily.

Spokane Gets Convalescent Hospital. One of the buildings at the Spokane County farm is to be converted into a convalescent hospital for care of senior citizens. At present such patients are being cared for in private hospitals in the city.

Hygiene Group Meeting. The Northwest regional social hygiene conference was held at Multnomah Hotel, Portland, February 12. Adolph Weinzirl, professor of Public Health at University of Oregon, was chairman at the conference. Speakers included Donald G. Evans, Washington State Health Department; G. L. Amyot, provincial health officer of British Columbia; Walter Clark, executive director of the American Hygiene Association, and Allen Blanchard of the division of social welfare of the Social Security Agency.

Defense Notes. Tacoma has an active civilian defense organization under way and the city has been divided into three hospital zone areas, each served by a base hospital. In addition, ten emergency hospitals will be established. Groups of surgeons have been appointed to handle emergency cases. In Spokane, Charles Mowery and O. M. Rott are taking active part in certification of first aid instructors. In Whitman County ambulance units have been set up in ten towns throughout the county.

OBITUARIES

Dr. Benjamin Lawrence Brigham of Tacoma, died January 30, aged 84. He was born in Franklin, Pennsylvania, and received his medical education at the College of Physicians and Surgeons of Baltimore, graduating in 1880. He practiced for a time in Buffalo, Minnesota. In 1900 he came to Washington, establishing a practice at Kettle Falls. He had been retired for eleven years.

Dr. William Gilmore Booth of Seattle died February 6 at the age of 82. He was born in New Orleans and received his medical education at Baltimore Medical College, graduating in 1898. Shortly after graduation he came to Seattle, where he was in active practice until five years ago.

Dr. Frederick George Ulman of Enumclaw died January 29, aged 71. He was a graduate of the University of Oregon Medical School, receiving his degree in 1905.

SOCIETY MEETINGS

KING COUNTY MEDICAL SOCIETY

A regular meeting of King County Medical Society was held February 2 in the auditorium of Medical and Dental Building, Seattle, at 8:15 p.m., president William M. O'Shea presiding.

Mary K. Connolly, Gordon M. Parrott and Paul L. Williams were elected to membership. Membership applications were read from John R. Irwin and Thrift G. Hanks.

R. L. Zech, chairman of the State Medical Committee on Procurement and Assignment Service, discussed procurement and assignment of the medical profession.

The program consisted of a panel discussion of syphilis, presented by Stephen T. Parker, chairman; Frank J. Clancy, Edwin G. Bannick and Joseph W. Shaw. Discussion pertained to early syphilis, latent syphilis and late syphilis, the latter being subdivided into syphilis of the nervous and cardiovascular systems. Questions regarding the different phases of syphilis were answered by members of the panel.

SEATTLE SURGICAL SOCIETY

Seattle Surgical Society held its annual meeting January 23 and 24 in Seattle. Guest speaker was Frank R. Menne of Portland. New officers installed were H. Eugene Allen, president; E. B. Potter, vice-president and Ralph Loe, secretary-treasurer.

SKAGIT COUNTY MEDICAL SOCIETY

Annual meeting of Skagit County Medical Society was held in the President Hotel in Mount Vernon January 26. Roy McCartney of Anacortes was named president; M. T. MacAvelia of Mount Vernon, vice-president and Hilda Behrns, Mount Vernon, secretary.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society held its regular monthly meeting at Grand Hotel, Walla Walla, February 12. Charles E. Watts, internist of Seattle, presented a paper on "Tachycardia." Following the paper there was a lively discussion with many questions which Dr. Watts answered.

WOMAN'S AUXILIARY

Washington Auxiliary members plan to attend the auxiliary sessions of the National Convention of the American Medical Association at Atlantic City, N. J., June 8-12.

All of the auxiliary units in the state are now engaged in some sort of defense work, many having "nutritional defense" programs and interesting themselves in first aid classes and Red Cross activities. Walla Walla Valley Auxiliary has dispensed with its regular program and is devoting the time to Red Cross work. Eight members of the Clark County Auxiliary at the February meeting met at the Red Cross headquarters for sewing, later adjourning to the home of Mrs. Clyde B. Hutt for a short informal business meeting and tea.

Yakima County Auxiliary was the hostess at a reciprocity tea held January 31 at the Yakima Y.W.C.A. More than sixty women members of Federated Clubs were guests. Mrs. Helen Michaelson of Central Washington College spoke on "Nutritional Defense." For the February meeting the members of the Yakima County Auxiliary heard Mrs. D. S. Corpron speak on a timely subject, "A Doctor's Wife in China." She and her husband have spent eighteen years in China as medical missionaries.

Mrs. R. A. Benson of Bremerton opened her home to the members of Kitsap County Auxiliary for the February meeting. The guest speaker was Miss Elsie Aronson of the Kitsap County Health Department who spoke on "Venereal Diseases and Control."

Cowlitz County Auxiliary with ten members present dined at Hotel Monticello in Longview recently. A total of fifty Hygeia subscriptions reported and a donation of $10 was given for the first aid station at Cathlamet.

In Tacoma the Pierce County Auxiliary met in February for luncheon at the Y.W.C.A. The program presented was in the form of "Information Please" with the following auxiliary members participating: Mrs. Treacy Duerfeldt, Mrs. G. M. Steele, Mrs. Homer Humiston, Mrs. S. Herrmann and Mrs. Fay Nace.

Mrs. George J. Vandenberg,
State Chairman of Press and Publicity

CLINICAL FORUM

(*Continued from Page* 106)

arrived for cesarean section, I should consider it the method of choice and proceed immediately with a classic section followed by removal of the uterus. I should not consider a cesarean unless adequate assistance were available and I could proceed without delay. The fact that the woman was in labor a long time and the membranes are ruptured is no contraindication because the uterus is going to be removed.

In case I follewed the more conservative method of version and extraction, I should recommend sterilization of the patient or her husband at a later date to prevent further pregnancies which are definitely contraindicated in her case.

Second commentator states: Such a problem is one that demands real mettle in a doctor who is definitely faced by a patient presenting such symptoms, and especially such a grave situation as this one, right out of a clear sky.

In the first place, her condition is serious. The history, blood pressure, urinary findings and complaints when first seen almost foretell her death. Her family, however, cannot see the difference between this pregnancy and the previous one, where ten years ago she was in a perilous condition and yet passed through it; if not safely, at least she came through with a live child and was alive herself.

Second, (a) if the doctor does a cesarean at once, the mother is almost surely going to die; (b) however, if he does a cesarean at this time, he is practically assured of a live child, even though the mother does not make the grade; (c) if he takes the conservative road and the cervix dilates rapidly and easily, and the baby descends into the pelvic canal quickly and thereby one is able to effect an early and easy delivery, the possibility of a live mother and live baby is greater than in any other method.

On the other hand, if these elements do not come to pass as one wishes, the cervix proving to be unyielding, and the baby is not born within a few hours, the doctor stands to lose both patient and baby. It is quite a dilemma in which the doctor finds himself suddenly forced. He will also find schools of thought advising an obstetric procedure which will back him up quite authoritatively in either way; a cesarean at once or watchful waiting.

It is apparent that the doctor and his consultants chose the latter way. From the description of the case, too, it is quite obvious that the cervix did not yield; the rapidity with which one would have hoped that the baby could be born did not materialize; and the facts as presented toward the last of the problem makes one feel that the physician in charge is going to lose both mother and baby.

If the medical profession, the medical auxiliaries to northwest states medical associations and women's clubs of these states could be so impressed that they would spread the knowledge of the necessity for all expectant mothers to consult a physician early, with regular monthly visits to his office, our mortality in the states of Idaho, Oregon and Washington could be materially decreased.

Third commentator has these views: A patient entering hospital with epigastric pain of several hours duration is most certainly going to have convulsions, so without waiting, (1) give one or two doses of morphine sulphate gr. ¼, (2) give intravenous nembutal (or sod. amtyal) 7½ gr., (3) when quiet give intrav. 25 per cent glucose in water (not saline) 200-300 cc., (4) 4 cc. 50 per cent mag. sulph. intramuscularly, (5) enema of saturated mag. sulph. sol., also ½ oz. mag. sulph. by mouth, (6) repeat morphine gr. ¼ if any stirring, unless respirations less than 12, alternate with intramusc. sod. luminal gr. 4, or intravenous nembutal gr. 3 to 7½ as indicated, (7) repeat glucose as above every 6 hours given slowly. Unless this keeps the kidneys secreting 30 cc. per hour, the prognosis is grave.

Early in above treatment rupture the membranes. Let labor come on of itself. Do not use pituitrin; it will cause severe cramps only and kill the baby. Castor oil and quinine after 48 hours, if the patient has survived the eclampsia and is not in labor.

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IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, SEPT. 16-19, 1942

MEDICAL NOTES

Health Unit Plans Disrupted. Ada County commissioners refused to approve a budget of $4,441 as their share in budget of the city-county health unit for Boise and Ada County. The county portion of the work of the unit, established last year, was immediately dropped. The health unit was established before the 1941 city budget was approved but after adoption of the 1941 county budget, and had been working on city and federal funds for the past year. Budget for the entire unit was $28,226. Of this, the county and city each was to provide $4,441, the state $2,300 and the federal government $17,044. A portion of the personnel will be relieved. There is some question as to the status of construction of the public health center which is to be built on the Boise Junior College campus. Low bid submitted was $41,000. E. L. Berry, director of the state department of health, said that it might be possible to reduce size of the buildings and proceed with construction.

OBITUARY

Joseph R. Numbers died at the home of his son, J. Reno Numbers, Boise, February 17. He was 77 years of age. He was born in Ohio in 1864. He graduated from University of Cincinnati in 1885. Following graduation he practiced for a short while in northern Minnesota. He located in Weiser in 1888. He was a pioneer physician of southwestern Idaho and his name was associated with many civic enterprises in Weiser. He was a charter member of its Masonic Lodge. At one time he served as Mayor of that city. He was a member of the first State Medical Examining Board in 1899. He has served as president and secretary of Idaho State Medical Association. In 1910 he moved to Boise, where he practiced until about two years ago. He was an active practitioner for fifty-two years.

SOCIETY MEETINGS

SOUTHWESTERN IDAHO DISTRICT SOCIETY

Southwestern Idaho District Medical Society held a meeting at Owyhee Hotel, Boise, Friday, February 20. The Woman's Auxiliary met jointly with the society for dinner and program.

Frank Sprague of Boise lectured on "The Evaluation of Physical Fitness," with lantern slides. W. W. Bauer, Director of the Bureau of Health Education, American Medical Association, discussed "Medical Relationships to War Activity." Dr. Bauer has been in Idaho under the auspices of the Woman's Auxiliary.

The following were elected to membership: Norman Hedemark, R. H. Engelcke, Dale H. Davies, Grant Balding and Hazen B. Dames, all of Boise, and Kenneth A. Heitmann, Cascade.

A letter from Nathan B. Van Etten was read in regard to a plan in Washington for broadening the Social Security plan to include payment of three dollars a day for any hospital illness to participants in "Social Security" and their dependents. It was voted that the Secretary be instructed to notify the Idaho Congressional Delegation, the Idaho State Medical Association and Northwest Medicine that this Society is opposed to such a plan.

A resolution was passed in memory of J. R. Numbers who died recently. The Secretary was instructed to send a copy to the surviving family.

Robert Smith announced a meeting of the Boise Physicians Club Tuesday evening, February 24, at the Owyhee Hotel, called for a "going away party" for Manley B. Shaw who has been called to active duty in the Navy.

The President, Dr. Handford, presented a modified plan for cooperation of this Society with the Farm Security Administration to provide medical care to the people under this program. The contract presented was formulated and accepted by Oregon State Medical Society and its constituent societies. The plan calls for cooperation of Southwestern Idaho District Medical Society with the Oregon State Society. A long and lengthy discussion followed. It was revealed that some members of this society have entered into contracts with the Farm Security Administration and that such action without approval of the society, is strictly against Article 4, Section 1 of the Constitution and By-Laws of the Society. After considerable discussion it was voted the members of this Society may enter into contracts in conjunction with Oregon State Medical Society, and its constituent societies, for the care of members of the Farm Security Administration, the contract to be in force only for one year.

POCATELLO MEDICAL SOCIETY

The Pocatello Medical Society held a regular meeting at St. Anthony's Mercy Hospital. The city and Bannock county were zoned and organized for med-civilian defense, following quite closely the plan published in the *Journal A. M. A.* The plan uses nearly every doctor, and later will use every medical practitioner in the area. The nurses and civilian groups also are preparing to give all aid in case of disaster.

D. C. McDougall presented and ably discussed the subject rather new to this locality of "Acrodynia or Pink Disease." He showed still and moving pictures of some cases. This is a disease of childhood with no real unquestioned cases among adults. The "five p's" make a tentative diagnosis: pain, peeling, pink hands and feet, paresthesia, photophobia, and perspiration verified by tachycardia and insomnia. The disease lasts several weeks and ends by lysis. When the child recovers there are no sequelae to be observed. Because there is no specific treatment, varied therapy is employed. Dr. McDougall and some others have used vitamins B, B compl. and C.

CLINICAL FORUM

(*Continued from Page* 109)

Too little and too late, is my comment on history of case as given; 60 per cent glucose must be a misprint.

If in an outlying district when patient first seen, I would give murphine gr. ½ and transport her to a hospital even if forty miles away.

Fourth commentator says: In view of recent knowledge regarding water balance, this patient should be given about 5000 cc. of 5 per cent glucose in sterile water, rather than the 10 per cent in normal saline. The idea is to reduce the blood chlorides, push fluids and thus reduce the tissue edema.

As the fetal heart tones were good I believe that nembutal or sodium luminal would have been a safer sedative than morphine. The narcosis produced by the morphine, as well as the existing toxemia, would be very hazardous for the baby. According to the history the patient made practically no progress after two days of labor. The insertion of a Vorhees bag would have hastened dilatation and decreased the risk to both mother and baby.

Now for the case. This woman came in stating she was eight and one-half months pregnant; she had had one section, the cause for which was a severe toxemia as shown by the fact that she had had fourteen convulsions. At this time one would immediately diagnose an impending eclampsia. Therefore, if she were my patient, I would do another section just as quickly as I could get her to a hospital.

If called in during this now desperate situation, I would complete the cervical dilatation manually and deliver with forceps. If the case occurred in my practice in an outlying district, I would put her in the car and take her to the hospital immediately.

Conclusion of case: The patient was catheterized, obtaining 10 cc. of urine. The cervix was easily manually dilated to full. No anesthetic was necessary, coma was so deep. High forceps were applied and a stillborn child delivered. The mother expired eighteen hours later. No urine could be procured by catheterization, although ample quids had been administered; a state of anuria existed.

If a cesarean had been done on entrance, probably a live infant would have been delivered. Whether it could have continued to live, since the mother's toxemia was so intense, is a question. The mother was doomed from the time of entrance into the hospital.

BOOK REVIEWS

Anatomy of the Nervous System. By Olof Larsell, M.A., Ph.D., Sc.D., Professor of Anatomy, University of Oregon Medical School, Portland. 443 pp., $6.50. D. Appleton-Century Co., New York, London, 1942.

Those familiar with Dr. Larsell's earlier Textbook of Neuroanatomy and the Sense Organs will note that this volume covers the subject much more completely and that many illustrations have been added. The author presents not only a description of the structure of the nervous system but has included enough physiology to give functional significance to the anatomic features described. As a rule he treated the gross anatomy briefly and placed the main emphasis on microscopic structure and internal arrangement of the nervous elements and the function of the various parts.

Students will be struck at once with the splendid manner in which the book is organized and the clarity with which it is written. The illustrations are numerous and of good quality. The author has included in this book an entire new atlas consisting of sections through the brain stem and spinal cord, showing nuclear and fiber trace configurations with both cell and fiber stains. He has also included selected plates from Jelgersma's Atlas Anatomicum Cerebri Humani. The use of colors in some illustrations, particularly in the cross sections of the spinal cord, is an aid in the localization of the various nerve tracts which are described.

There are tabular summaries dealing with the fiber tracts in the spinal cord, the autonomic pathways, the subdivisions of the cerebellum, and the thalamic nuclei which the student will find to be very helpful. The discussions of illustrative lesions given at the end of the chapters may be helpful to students but are too brief to be of much value to the diagnostician. All in all the book is one which should help eliminate vapidness from the arduous task of studying neuroanatomy. John Raaf

Clinical Roentgenology of Pregnancy, By William Snow, M.D., Director of Radiology, Bronx Hospital, New York City, etc. 178 pp., $4.50. Charles C. Thomas, Springfield, Ill., 1942.

The aim of this book is strictly practical "to enable the reader to do the work himself." The author claims an accuracy for his measurements, usually of not more than one-half centimeter out of the way. The basis for this statement is actual measurements made on cadavers and several at the time of cesarean section. The author's method is a development of the proportional method popularized by Ball and others. It has certain features that should appeal strongly to the obstetrician. For example, measurements of the inlet, midpelvis and outlet are given directly in centimeters, linear measurements which the clinician is accustomed to use. He gives two measurements each for the pelvic inlet, midpelvis and outlet, also the perimeter of the fetal skull. From the roentgenologist's standpoint certain technical steps have been simplified, most notably the use of a convenient special slide-rule to take the place of the large charts of figures commonly used. No costly equipment is required.

One of the most interesting features of the book consists of actual case reports. Included are roentgenologic measurements with a brief clinical description of the case, including the course and outcome of labor. The roentgenograms are overlaid with diagrams for measurement and are drawn to scale so that anyone seriously studying the method is enabled to check them directly. R. E. Stewart.

The Doctors Mayo, by Helen Clapesattle. 822 pp., $3.75. The University of Minneapolis Press, Minneapolis, 1941.

This is a carefully organized, accurate, well documented biographic study of more than usual general appeal. It traces the lives of the father and two sons through their educational periods and early days in practice and development of the Mayo Clinic and Foundation. It may seem to the nonmedical reader overburdened with contemporary

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historical and medical data. It is, however, highlighted with numerous interesting and illuminating anecdotes of these great men. As a chronologic history of the development of American surgery and medicine and the important parts played by the Mayos it is a work of the highest order.

The profession will find it particularly worth reading because of the detailed account of surgical developments, beginning with the pioneer days prior to Listerism, when surgery consisted mainly of kitchen table amputations. Particularly fascinating are accounts of the life-long quest of newer surgical technics on innumerable clinical trips through the Americas and Europe, made by the father and later the sons.

Older physicians will find the surgical contributions of many of their old teachers and acquaintances recorded. Younger men will find the book a rich background of personalities, surgical evolution and many controversies upon which their knowledge is founded. Few will fail to be greatly impressed with how recent and dramatic is the history of modern surgery. The story of development of the Mayo Clinic and Foundation and its association with the University of Minnesota reveals its growth as being due to the high professional standards and unselfish tenets which characterized its founders. C. D. KIMBALL.

A PRIMER ON THE PREVENTION OF DEFORMITY IN CHILDHOOD. By Richard Beverly Raney, B.A., M.D., Associate in Orthopedic Surgery, Duke University School of Medicine, etc. In Collaboration with Alfred Rives Shands, Jr., B.A., M.D., Medical Director, Alfred I. duPont Institute of The Nemours Foundation, etc. 188 pp., $1.00. National Society for Crippled Children, Inc., Elyria, Ohio, 1941.

This is a concise and clear description in simple language of orthopedic conditions and simple means of prevention of early deformity in these conditions. It is a book which would be of great value to public health nurses and welfare workers who have to deal with crippling conditions among children and adults, and it is by no means of less value to the medical student. It would serve very well for the first introduction to orthopedics for the medical student. One frequently hears statements made by medical students that the descriptions and terminology used in teaching this subject in the medical schools are somewhat beyond their grasp. This book would serve as an excellent introduction. Illustrations for splinting of simple deformities and descriptions of some of their more common surgical and nonsurgical corrections are well presented. J. F. LECOCQ.

IMMUNOLOGY. By Noble Pierce Sherwood, Ph.D., M.D., F.A.C.P., Professor of Bacteriology, University of Kansas, etc. Second Edition Illustrated. 639 pp., $6.50. The C. V. Mosby Co., St. Louis, 1941.

This book covers the broad subject of immunology. The text is mainly composed of abstracts and interpretations of the work of men engaged in the various specific problems of immunology. It carries extensive references which afford the serious student an opportunity to examine in detail the data which are referred to in the text.

Each of its twenty-eight chapters deals at length with a distinct phase of immunology which is a basic principle in the science of medicine. One seeking information on this subject will be rewarded by readnig this book.

D. G. EVANS.

FOOD AND BEVERAGE ANALYSES. By Milton Arlanden Bridges, B.S., M.D., F.A.C.P., Assistant Clinical Professor of Medicine and Lecturer in Therapeutics, New York Postgraduate Medical School, Columbia University, etc., and Marjorie R. Mattice, A.B., M.S., Assistant Professor of Pathological Chemistry, Department of Medicine, New York Medical School, Columbia University, etc. Second Edition, Thoroughly Revised. 344 pp., $4. Lea & Febiger, Philadelphia, 1942.

Little dietetic recognition has been given to the subject of canned and packaged foods, notwithstanding their increasing public use, and their analyses have been chiefly available through contact with manufacturers. The material in this book has resulted from intensive efforts of a large staff of assistants and investigators who have searched records to correlate and evaluate available international data. Also analyses of recognized commercial products have been obtained from manufacturers.

Published data include tables on acidity of foods, fiber content and occurrence of sulfur, bromine, calcium, purins, carbohydrates and iron and other ingredients. It is replete with extensive tables on nutritive and caloric values of foods, special dietetic foods, reciped foods, carbohydrates in fruits and vegetables, representative vitamin values for some foods. These are some of the indications of the value of this volume for one seeking information on foods and beverages in common use.

DISEASES OF THE NERVOUS SYSTEM, Described for Practitioners and Students by F. M. R. Walshe, O.B.E., M.D., D. Sc., F.R.C.P. (Lond.) Hon. D.Sc., Nat. Univ. Ireland, Physician in Charge of the Neurological Department, University College Hospital, London, etc. Second Edition, 325 pp., $4.50. The Williams and Wilkins Co., Baltimore, 1941.

This compact book makes interesting reading and has an easy method of presentation of a rather difficult subject. The author's discussion of various factors that go into neurologic diagnosis is comprehensive and, unlike many other textbooks, is simple to understand. One cannot help but get a fair grasp of methods used in neurologic diagnosis from material as presented. The actual discussion of specific diseases is possibly too short and, unfortunately, due to this brevity, one obtains a pessimistic viewpoint as to treatment and prognosis of nervous disorders. Portions of the book particularly worthy of reading are discussions of tumors of the brain and peripheral nerve involvment.

N. K. RICKLES.

RHEUMATIC FEVER IN NEW HAVEN. Edited by John R. Paul, M.D., Professor of Preventive Medicine, Yale University School of Medicine. 176 pp., $1. The Science Press Printing Company, Lancaster, Pennsylvania, 1941.

In this volume the author has assembled many data pertaining to rheumatic fever in an industrial city. One interested in this subject will find useful information in it. He stresses the hemolytic streptococcus as the predominant agency in producing this condition. He states "there is no consistent evidence which indicates that under conditions of extreme poverty the prevalence of rheumatic fever is correspondingly enhanced." He believes that parental rheumatic fever is a factor in its appearance in the children. Such publications help to increase one's knowledge of this widely prevalent disease.

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EDITORIALS

CHARACTER OF POSTWAR MEDICINE

What is to become of the medical profession after the war? To be sure, it is a little early to be thinking about postwar conditions before we are fairly involved in the conflict or before we have even begun to suffer the blight which the hand of Mars will place upon our persons or our fortunes. The medical profession, however, knows well what its part in the war shall be. The plans are laid, the pattern is set and, as always, we shall serve wherever and whenever there is human need, be that need military, industrial or civil. Our part in the war is a settled thing.

Necessarily our status after the war will be largely dependent upon that of the world in general. It is inconceivable that a free profession could survive in a world governed by dictators. It is also quite out of the bounds of probability that a general system of free enterprise would tolerate in its midst a government controlled practice of medicine.

Whatever organization of society comes out of the present boiling cauldron of human affairs, there is one thing of which we may be certain. It is that there will be a wider and more equable distribution of the world's goods. This has been the trend since the renaissance, obscured at times but nonetheless evident as a thread running more and more strongly through the fabric of world history. Nowhere has it been more evident than in our own country, where the working man now enjoys luxuries beyond the reach of the most affluent of a generation ago. The masses have found voice and power. They will use both after the war.

One economic system failed in 1929. It could, perhaps, have been revived but was not. The fact that the majority of the people did not desire a return to the old order points to one inescapable conclusion. Its defects and injustices outweighed, to many, its advantages. It permitted abuses which hurt and it prevented, many times, adequate distribution of the product of our industrial machine.

We must honestly recognize that it did not always provide the greatest good for the greatest number.

Since 1933 we have been attempting to build a somewhat different type of order. Like the wren which carries many more sticks into her house than she can possibly use in building her nest, we will undoubtedly later throw out much that we have included in the present order. It is at present cluttered with a great deal of trash which we might well do without. But we will not go back to the old system just as it stood before 1929. We will try mightily to develop a system which will provide the greatest good to the greatest number.

To this principle, then, must we look if we are to preserve the best in medicine. The character, the integrity, the unselfishness and the devotion to duty of the individual medical man have been developed to an extremely high order. Service to mankind by the profession as a whole might occasionally be improved.

The possibility of greater and more effective use of present knowledge has not escaped the same public which insisted that the old economic order was not perfect. There has been much public clamor for various schemes to control the practice of medicine. It would be utter folly of the most ignorant sort blandly to insist that such hubbub were without basis in various abuses permitted in the past, or to maintain that the popular expression was the result solely of the work of demagogues and agitators. Such persons usually only fan a flame. They seldom start one.

What is to become of the medical profession after the war? That question cannot now be answered. Its fate is inextricably bound up with that of the rest of the world. But if it is to preserve its heritage of standing and respect, if it is to save that which is valuable and good, it must eliminate the abuses and injustices which have crept in to undermine and weaken it. It must aid its members who falter and curb those who wander. It must accept the challenge to provide the greatest good to the greatest number.

MEDICAL SERVICE PLANS

During recent years much attention has been paid to plans for providing low wage earners with adequate medical service commensurate with their financial status. These efforts have been sufficiently widespread to warrant a Conference on Medical Service Plans which was held in Chicago, February 14, at headquarters of the American Medical Association. There was an attendance of sixty-four persons representing these forms of practice as carried out in seventeen states.

Three forms of medical service plans were mentioned. The group clinic plan involves the association of several physicians, which functions in various parts of the country, said to number seventeen with enrollment of 100,000 clients. There are also numerous so-called clinics conducted in various states under the direction of one or more physicians, or in some cases laymen, who employ a certain number of physicians for treatment of patients, these plans resulting in substantial financial returns to their proponents. The second plan of employee-employer mutual benefit associations and commercial insurance company plans, numbering respectively about 300 and 250, provides cash indemnity benefits.

The plan conducted by the medical profession on a nonprofit basis, sponsored by medical societies, numbers thirty-three operating bureaus in nine states, said to have an enrollment of 750,000 persons. Under this form of operation medical services are extended by members of medical societies with free choice of physicians on the part of patients, with no profits reserved for executives or proponents.

This form of medical service for low wage earners is well established in Washington and Oregon. In fact, the plan of medical service bureaus originated in Washington, the first county society bureau having been organized in 1917. In following years thirteen other county societies established such bureaus, each being an independent organization managing its own problems without state or other supervision. The same basic principles have guided all of them, and conferences from time to time have sufficed for interchange of experiences. Each bureau has encountered problems peculiar to itself and has solved them satisfactorily. A large majority of the members in each county society are members of its medical service bureau, and the plan has worked to the satisfaction of physicians and clients who number at the present time about 125,000 persons. In Oregon the medical service bureau system has been in operation for about five years. It has functioned under the supervision of the state society which has established and directed bureaus under the direction of county societies. The plan has met successfully the problem of medical service for low wage earners wherever it has functioned.

While this form of practice met with criticism and some opposition at the outset in both of these states, the plan is progressing satisfactorily and has to a large extent served to provide adequate medical service for low wage earners. At the Chicago conference a committee was appointed to determine the best method of establishing a permanent organization of medical service plans throughout the country. It was stated that the nonprofit medical society plan is developing most rapidly, and bids fair to be widely established in many more states.

SPRING CANCER CAMPAIGN

Number one medical problem is cancer. During the past half century the causes of many baffling diseases have been discovered, followed by methods of treatment which have been effective. Cancer is the outstanding of all diseases, whose cause is yet to be discovered, in spite of many assertions from various parts of the world that the causative agent had been disclosed. Probably the treatment of no other disease has been subjected to so many unproven assertions, with infliction of so much misery and failure on the unfortunate victims. The belief has frequently been postulated that this mystery will some day be solved.

It is the unanimous opinion of the medical profession in all lands that the first necessity in consideration of cancer is early diagnosis. Accomplishment of this depends primarily upon the attitude of the victim of the disease. To attain this end is the main purpose of the educational program which has been persistently promoted by many agencies. It is asserted that fear, ignorance and delay are the three allies of cancer which lead to disaster and death. These can be overcome by knowledge of the early signs and symptoms of the disease, and of the methods of fighting it. To disseminate this knowledge the American Society for the Control of Cancer has for years been engaged in all parts of the country, and it is worthy of the support and cooperation of the medical profession and all interested in decreasing the deplorable results of this unconquered disease.

An early diagnosis having been obtained, the public needs education to be convinced that there are only three reliable methods of treatment, skillful surgery, application of radium and roentgen ray. By their judicious employment after an early, established diagnosis, many cancer afflicted individuals may anticipate cure and longevity. Along these lines the educational program must be carried out.

The month of April has been designated for an intensive publicity of propaganda for the annual spring campaign of the Women's Field Army, whose objective is to disseminate information. Due to ignorance and fear, accomplishments of this campaign have been thwarted in the past. It is believed that this situation may be remedied by united efforts of all classes of people aiming to spread the gospel of scientific knowledge concerning cancer and the approved methods of attacking it. All physicians are urged to cooperate and assist in this educational campaign in all cities where it is conducted.

EVERYONE MUST HELP

The war will be won by aid of equipment contributed by the United States but the decisive factor will be the manpower of the United Allies, of which the manhood of our nation will be an integral part. Never before has our army participated in battles in all parts of the world which has now become a necessity to assure victory. An honorable part in this result will be borne by members of the medical profession who have voluntarily enlisted in large numbers when the call was issued for their services.

Victory, however, will not be attained solely by the forces at the front. Every man and woman at home must do his share to bring the war to a victorious conclusion. What part each individual can most successfully contribute is not to be stated categorically. Everyone should seek the field in which he can be most useful.

Men of our profession in the Pacific Northwest are doubly obligated to national duty in this all-out fight for freedom in a war-torn world. We serve the armed forces abroad and at home. The responsibility for care of civilians increases for those of us on local fronts. In addition, we know the crying need for additional tools of war for the protection of our own shores and for the swing to offensive action against the Japs and the Nazis. For this, we as Americans will carry our share of the financial load which total war puts upon the Nation.

Our tax bills are higher than ever before. But still the revenues do not cover the annual cost for planes, cruisers, antiaircraft guns and ammunition. We must, in addition, invest our current savings in United States Defense Savings Bonds and Stamps. Defense bond dollars buy war material and equipment. At the same time, the bonds and stamps represent financial reserves which build toward individual future security. There are registered, interest-bearing bonds for us as individuals and for all medical associations. None should be so negligent or indifferent as to fail in bearing his share of this financial burden.

ORIGINAL ARTICLES

GASTROJEJUNAL ULCER*

Bernard P. Mullen, M.D.
SEATTLE, WASH.

First, I would like to report a case briefly and then discuss some of the problems and surgical principles involved.

Male, aged 46. In 1933 he had an intractable duodenal ulcer which failed to respond to adequate medical management. Because of this, surgery was recommended and a posterior gastroenterostomy performed.

He was a high strung individual with a high gastric acidity, and as a result he developed in a very short time a jejunal ulcer. This was treated medically with little relief since its onset, and he has been up almost every night since 1933 taking powders or pumping his stomach.

He was referred to me about six weeks ago, at which time he had a complete obstruction at the anastomosis. Soon after admission to the hospital he vomited 700 cc. of blood and had another smaller hemorrhage the next day. This patient, after years on a limited diet and then a massive hemorrhage, was in an extreme state of depletion. After a number of transfusions I operated upon him and did a jejunostomy for the purpose of giving jejunal feedings and putting the stomach and ulcer at complete rest.

Following this, he had no more hemorrhage. His fluid balance, hemoglobin, serum protein and vitamin stores were returned to normal, and after one month I operated upon him again, undid the jejunostomy, also the old gastroenterostomy and resected three-fourths of his stomach. I placed a Rawson-Abbott[1] tube through his nose and at the time of operation threaded it into the distal arm of the jejunum. Due to scarring in the transverse mesocolon from the jejunal ulcer, the transverse colon in its midportion appeared a little dusky after the stomach had been removed, in spite of the fact that great care had been exercised to avoid the midcolic artery. And I feel certain that no injury was done to it. It was decided that the colon was viable and the abdomen closed.

On the second day the cecum became distended, and on roentgenography the obstruction appeared to be in the middle of the transverse colon. The problem here was whether or not to reoperate at once to determine the viability of the colon. It was decided that, if the colon were gangrenous, it would dilate instead of contract. The distention of the cecum was relieved by conservative measures. and with this exception the patient made an uneventful recovery, is free of all his old symptoms, is eating freely and gaining weight.

This case is not presented because it is rare but because it presents a number of problems in stomach surgery, and I will discuss each in detail.

The first complication encountered was a complete or nearly complete obstruction at the anastomosis. His serum protein was low, and it was thought that building this up to normal with blood and plasma transfusions might relieve the obstruction enough to feed him and relieve the malnutrition and vitamin shortage. It is well known that low serum protein will produce edema at the anastomosis as it will elsewhere in the body and in this manner produce a complete obstruction. In addition to the transfusions, continuous stomach siphonage was started, his electrolytes replaced and fluid balance corrected by parenteral administration of glucose in saline.

The second complication occurred in the form of a massive hemorrhage. Two days after admission to the hospital he vomited 700 cc. of blood. This was followed by a second hemorrhage the following day. It might be well to state briefly at this time the principles most generally accepted in the surgical treatment of massive hemorrhage from a peptic ulcer. They are as follows:

1. When the patient is under fifty years of age, surgery should not be undertaken during the hemorrhage.
2. In the case of repeated massive hemorrhages under the age of fifty years, operate after the hemorrhage has stopped and the patient is in condition.
3. When the subject is over fifty years and there is no lessening of the hemorrhage within twelve to twenty-four hours, operation to stop the hemorrhage should be attempted. (There is most controversy on this indication).
4. In the case of a patient over fifty years of age who has recovered from a single massive hemorrhage, he should be operated upon when in condition as soon as possible before a second hemorrhage occurs.

These indications are based on the fact that the mortality of massive hemorrhage increases with age and with each succeeding hemorrhage. Operations for hemorrhage should be directed toward removing the bleeding lesion.

This patient was under fifty. His first hemorrhage occurred after entering the hospital. He was in no shape for major surgery because of his undernourishment, depleted vitamins, anemia, lowered serum proteins and obstruction.

It was thought best after transfusions to do a jejunostomy. It was thought that by this procedure the stomach and marginal ulcer could be put at complete rest and the patient could be brought up to a state of normal nutrition, his serum proteins and vitamins replaced, and his anemia and fluid balance corrected by feeding through the jejunostomy tube one of the jejunal feedings recommended. It was also believed that with the ulcer placed at complete rest the inflammation and edema about it would subside and facilitate subsequent surgery and that further erosion of the bleeding vessel would stop.

After one month of this type of feeding he was regarded as ready for the second operation. At this time the jejunostomy was undone as was the old gastroenterostomy, and three-fourths of his stomach resected, using the antecolic type of anastomosis. The patient is now up and about and eating well.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

[1] Abbott, W. O. and Rawson, A. J.: Tube for Use in Postoperative Care of Gastroenterostomy Cases, J. A. M. A. 108:1873-1874, May 29, 1937.

The complicating gastrojejunal ulcer occurs most frequently when the operative procedure has been poorly selected. This man's first operation in 1933 was a poor choice because he was in his middle thirties and had a high gastric acidity and had no obstruction at the pylorus.

Gastrojejunal ulcer was produced by Mann and Williamson[2] experimentally in almost 100 per cent of dogs, in which the jejunum was anastomosed to the end of the stomach and the distal duodenum to the lower ileum which shunted the alkaline secretions of bile and pancreatic juice to the lower ileum and allowed the unneutralized acid chyme to pass immediately into the jejunum. A comparable situation is produced in gastroenterostomy done in the case of a high gastric acidity with a patent pylorus. The acid chyme passes through the pylorus to neutralize or acidify the duodenal biliary and pancreatic secretions so that there are no strongly alkaline secretions passing by the stoma to protect the jejunal mucosa from the acid chyme.

Whatever the underlying cause of a gastric or duodenal ulcer is, we do know that an increased acidity prevents it from healing and is in itself the cause of all jejunal ulcers. Whether the treatment is medical or surgical, and if surgical a direct or indirect operation, all methods are directed towards lowering the gastric acidity.

It must be evident, then, that some understanding of the mechanism of gastric secretion is necessary in order to control it. Ivy[3] has classified gastric secretion into two periods: first, the interdigestive period; and, second, the gastric period. The clinical significance of the first period is that in the case of a peptic ulcer the patient may have a continuous secretion between meals which is believed to be due to the production of histamine by irritation of the mucosa. The second or digestive period is subdivided into the cephalic, the gastric and the intestinal phases.

In the cephalic phase the stimuli come from the head, are started by conditional and unconditional reflexes, and are transmitted by the vagus nerve. Attempts have been made to reduce the stomach secretion by sectioning the vagi, thus removing the cephalic phase. These failed because the vagi also have inhibitory fibers, and for other reasons.

The gastric phase is the one of most clinical interest. It means that the stimuli are acting in the stomach, and are of two types: (1) those produced by mechanical distention, and (2) those produced by secretogogues which in turn are present in foods or are produced by their digestion.

The intestinal phase is due to secretogogues only. Distention of the intestine may produce inhibition of gastric secretions.

Therefore, gastroenterostomy affects only the gastric phase of secretion and is successful because: (1) it provides rest for the ulcerated area; (2) it diminishes intragastric tension and diminishes the acidity; this latter is the result of (a) improved gastric emptying which decreases the gastric phase, (b) improves enterogastric regurgitation, and (c) the distention of the jejunum inhibits secretion reflexly.

The operation fails because the jejunum is more sensitive to acid chyme than the duodenum and because the gastric secretory mechanism is too sensitive. Specifically, a gastroenterostomy is most successful in a patient past fifty, where the acidity is low and there is obstruction at the pylorus. And for some unknown reason it is much more successful in women.

A gastric resection was selected in this case because his acidity was still fairly high and I was afraid of a recurrence of his old ulcer. In addition, Lahey[4] has stated that the final mortality, in cases in which a resection has been done following the undoing of a gastroenterostomy, is lower than simply undoing the anastomosis.

Lewis[5] in 1938, following the work of Edkins[6] in 1906, resected the antral mucosa of the stomach, leaving the muscularis and nerve supply intact and was able markedly to lower the secretion of the fundic mucosa. It is now believed that the antral and pyloric mucosa increase the fundic secretions by increasing the effectiveness of the secretogogues.

As a result of this work a gastric resection for ulcer is not now considered adequate unless all of the antral and pyloric mucosa is removed in addition to a large part of the acid secreting fundic glands. This removes the stimulus to secretion as well as the secreting glands.

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2. Mann, C. and Williamson, C. S.: Experimental Production of Peptic Ulcer, Ann. Surg. 77:409-422, April, 1923.
3. Ivy, A. C.: Mechanisms of Gastric Secretion, Surg. 10:861-878, Dec., 1941.
4. Lahey, F. R.: Diagnosis and Management of Gastrojejunal Ulcer and Gastrojejunocolic Fistula. S. Clin. North America. 20:767-780, June, 1940.
5. Lewis, E. B.: Acidity of Gastric Contents After Excision of Antral Mucosa. Surg. 4:692-699, Nov., 1938.
6. Edkins, J. S.: Chemical Mechanism of Gastric Secretion. J. Physiol. 34:134-144, 1906.

TUBERCULOSIS OF THE KNEE IN ADULTS*

H. J. Wyckoff, M.D.
SEATTLE, WASH.

The purpose of this paper is not to report a new treatment but to describe a method which has been highly satisfactory in my hands. Tuberculosis of the knee in adults is relatively uncommon but should always be suspected with any chronic swelling, keeping in mind that pain may be a late symptom and frequently is not as marked as would be expected from the pathology present.

An early diagnosis is desirable before abscesses, sinuses or other complications have developed. Diagnosis can usually be made from the history of chronicity, physical examination, roentgenography, laboratory examination, aspiration of the joint and guinea pig inoculation.

Operative fusion of the knee joint is the only treatment to be considered and this is accomplished by exposure of the joint by a long medial parapatellar incision. The synovial membrane is removed as completely as possible and the articular cartilage is removed, shaping the underlying bone so that the femur and tibia present broad opposing surfaces. The articular cartilage is also removed from the patella which is countersunk into the tibia and femur across the old joint line.

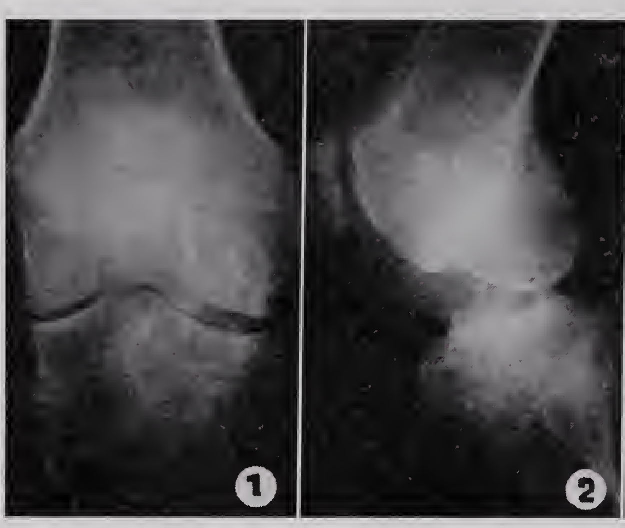

Fig. 1 and Fig 2 show knee before operation.

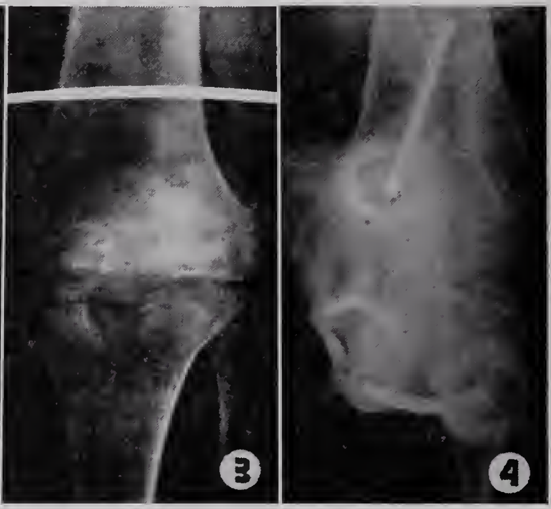

Fig. 3 and Fig. 4 show condition after operation. Note close apposition of bony surfaces.

After the wound is closed Steinmann pins are drilled above and below the joint line, and then the pins are grasped on either side to force the bony surfaces firmly together. While these are being held, plaster of paris is applied about the knee and pins, so as to maintain the position of the bony surfaces and, with the spring of the pins, hold them in close apposition. This portion of the cast is allowed to set and then the cast is completed, a single spica cast being all that is necessary.

The patient wears this cast for three months. At the end of this time the pins and cast are removed, and a new nonpadded cast is applied from the groin to the toes. This cast is worn for three months, when a brace is fitted which is worn until complete bony fusion takes place. It must be kept in mind that this usually requires from ten to thirteen months, from the time of operation until the bones are completely fused.

Although I obtained some excellent results before using this method with pin fixation, I did have a number of complications which I have not experienced with it. One of the other advantages which has been noticed is that the patient experiences very little pain following operation, probably due to the rigid fixation.

I wish to report four cases treated by this method. In all cases tissue was removed at operation and sectioned, with reports from pathologists positive for tuberculosis. Roentgenograms of the lungs indicated pulmonary involvement in all but one case.

CASE REPORT

Case 1. This lady, 32 years of age, was first seen at Firland Tuberculosis Sanatorium, with some complaint in the region of the right knee. The physical findings were not marked and the roentgenogram was reported negative for bone pathology. The patient had active pulmonary tuberculosis.

In November, 1938, the knee was aspirated and a positive guinea pig test obtained. She was operated upon January 7, 1939, by the pin fixation method and bony fusion was present on June 28, 1940. This lady has made a good recovery and has been doing all of her housework for more than a year. Recently, she has applied for a position at the Boeing Aircraft Company.

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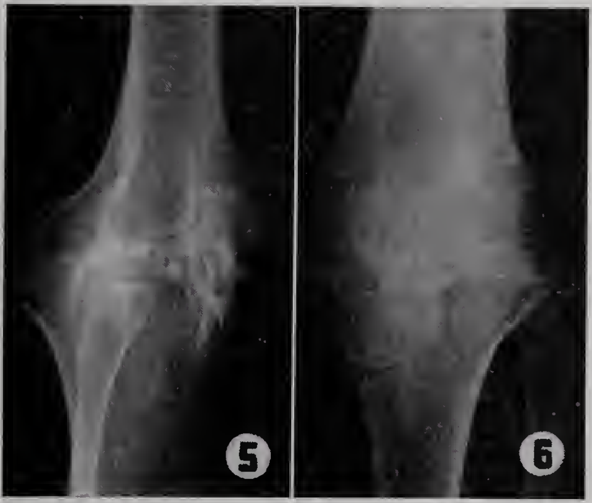
*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

Case 2. This boy, 21 years of age, was first seen on July 16, 1937. He gave a history of an injury three years before to the left knee with reinjury two years before the first examination and had had intermittent trouble with the knee since that time.

The roentgenogram at that time showed some definite destruction of bone about the knee joint. There was increased fluid in the knee joint and local elevation of temperature, with some limitation of motion. He was operated on December 9, 1937. Before the knee had fused, he developed a flareup of the pulmonary condition, requiring sanatorium treatment. Later he developed empyema.

He also developed a draining sinus, apparently superficial, in the region of the knee. This sinus healed and he obtained a solid fusion in about eleven months from the time of operation. The pulmonary condition also responded well to treatment and at the present time he is working in a department store in Everett.

Case 3. This girl, age 18, was first seen July 31, 1939, on account of trouble in the left knee for a period of four years. The disability was not great, as she had been attending high school, doing rather active things such as swimming, dancing, roller skating and skiing. Fluid aspirated from the knee at that time, gave a positive guinea pig test.



Figs. 5 and 6 show end-result with firm fusion.

An operation was done on August 18. Following operation, a draining sinus developed from the lower end of the wound. This was injected with Calot's paste and healed rather promptly. There was complete bony fusion in nine months from the time of operation. She was entirely free of pain from three days following operation, has made an excellent recovery and is now working at the Boeing Aircraft Company.

Case 4. This man, 36 years of age, was first seen January 17, 1939. He appeared extremely ill, giving the appearance of considerable loss of weight and was running a temperature of 102°.

Roentgenograms of the knee showed marked bony destruction with narrowing of the joint space. The knee was operated on February 2. Resection of the articular surfaces with from one-half to three-fourth inches of the underlying bone was made. A year later there was still slight motion in the region of the knee. He returned to Alaska at that time with a brace and was next seen February 14, 1941, when a solid bony ankylosis was found.

He states that he gained about thirty-five pounds following the operation but had lost some weight after getting around and becoming more active. He has again returned to Alaska, where he is carrying on his former occupation of a merchant.

The accompanying illustrations are of this case. Figures 1 and 2 show the knee before operation with a narrowing of the joint space, considerable bone destruction and cavitation of the tibia. Figures 3 and 4 show the appearance immediately following operation, in a cast with fixation pins holding bony surfaces in close apposition. Figures 5 and 6 show the end-result with firm bony fusion.

SUMMARY

1. A definite diagnosis should be made before operative fusion is considered.

2. Pin fixation preserves proper relationship of the bony surfaces, maintains rigid fixation and adds to the comfort of the patient. It also seems to hasten fusion and prevent complications.

SCIATICA FROM ANEURYSM OF SCIATIC ARTERY*

John F. LeCocq, M.D.
SEATTLE, WASH.

It is sometimes of interest to report the unusual case that is seen for diagnosis and treatment. The causes for sciatic pain are numerous, and one unusual cause is that of aneurysm of the sciatic artery. This is normally a very small artery that arises from the inferior gluteal artery just after the latter artery comes through the greater sciatic notch. The sciatic artery travels along the sciatic nerve for only a short distance and then penetrates the nerve trunk and runs along the length of the nerve to the lower thigh.

Aneurysm of the sciatic artery is extremely rare. Bryan[1] in 1914, in a review of the literature, found twenty-four cases reported and then described a case of his own. In going over the literature since that date, it is found there are reported only two more cases of true sciatic aneurysm. To these reported, I wish to add report of an additional case.

CASE REPORT

G. A., male, age 68 years. This patient was first seen November 27, 1941. He complained very markedly of pain in the right lower back, right buttock, and a pulsating type of pain going down the back of his thigh, into the calf and foot. The medial side of the foot also had a feeling of numbness.

His past medical history was that at fifteen years of age, when doing heavy lifting, he strained his lower back. This had bothered him some ever since then when he would do heavy lifting, but would pass away in a few days. In July, 1941, while picking strawberries, he developed a good deal of pain in his lower back, and the right buttock began to become painful. He then received some chiropractic treatments which gave some relief, but about two weeks after stopping these treatments the pain became much more severe, especially in the right buttock, and radiated down the back of the right thigh, into the calf and foot. This developed into a pulsating type of pain, and further chiropractic treatments gave no relief.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

[1] Bryan, R. C.: Aneurism of Sciatic Artery. Am. Surg. 60:463-475, Aug., 1914.

The only previous serious illness had been an attack of pneumonia about thirty years before. This was followed by empyema which was drained.

General physical examination disclosed no particularly abnormal findings excepting a slight bilateral inguinal hernia. Blood pressure was 140/90 millimeters of mercury.

On inspection of the right buttock there could be distinctly seen a rather violent pulsation, which was synchronous with each systolic heart beat. On palpation expansile pulsation was present, and it could be felt that the pulsating mass was located deep to the gluteus maximus muscle. A faintly audible bruit (by stethoscope) was present. Pressure on the pulsating mass produced intense pain along the sciatic nerve sensory distribution. The Achilles reflex was definitely diminished, but no other reflex or sensory disturbances were found.

Radiographs of the spine and pelvis showed marked osteoarthritic changes of the lumbar vertebral bodies, and there was an opaque shadow in the right buttock.

Laboratory work showed no abnormal findings, and the Wassermann test was negative.

A diagnosis of a probable aneurysm of the inferior gluteal or sciatic artery was made, and an exploratory operation recommended.

The patient then returned to his home, and was to return four days later for this operation. Two days later the pain became extremely severe, and he returned immediately for the operation.

At operation exposure was made by incision along the inferior border of the gluteus maximus muscle, and this was then turned up exposing the tumor mass. The tumor did not pulsate as much as it did at the original examination, and it was quite evident that partial thrombosis had occurred. This undoubtedly accounted for his severe onset of pain the day before operation. In dissecting around the sac, the necrotic wall broke and clots came out with a gush of bright blood. Bleeding was controlled by pressing the finger on the inferior gluteal artery. The sciatic nerve trunks were dissected carefully out of the sac, and they were found to be markedly flattened, undoubtedly due to the constant pounding of the tremendous hydrostatic pressure within the aneurysm sac. It was possible to ligate the artery where it entered the sac and also the artery emerging from it. The aneurysmal sac before rupture was about the size of a small orange. The wound was closed in the usual manner, and the patient was given a transfusion of 500 cc. of citrated blood. He was returned to his room in excellent condition.

His postoperative convalescence was uneventful except for some sciatic pain which persisted for several days. He was discharged from the hospital on the tenth postoperative day to bed rest at home.

A few days ago a letter was received from this patient, and he states he is doing well.

This aneurysm is slightly difficult to explain as to etiology. There were no clinical evidences of a syphilitic infection, blood was negative, and there was no history of trauma. A large percentage of these are either traumatic or syphilitic in origin. Hence, this undoubtedly must have originated from an atheromatous degeneration of the vessel wall.

USE OF BLOOD AND FLUIDS IN OBSTETRICS*

Robert K. Plant, M.D.
SEATTLE, WASH.

Use of blood, plasma and fluids in the treatment of shock, hemorrhage or infection associated with pregnancy is the same for these conditions met with in other branches of surgery. Obstetrics presents, however, its specialized problems which we shall touch on briefly.

In the severe cases of hyperemesis gravidarum there occurs a marked hemoconcentration. Blood chlorides are lowered through vomiting, and plasma is lowered since it has been partially utilized as food. The injudicious use of fluids will aggravate the condition instead of improving it, since, if diuresis is produced, further depletion of essential electrolytes will occur. Our problem is to restore the blood chlorides and keep up the nutrition of the patient. A suggested routine would be the administration of 500 cc. of 20 per cent glucose intravenously over a period of sixty to ninety minutes every six or eight hours, and the subcutaneous administration of 1000 to 2000 cc. of Ringer's solution once or twice daily. Transfusions may be given, if there is an associated anemia.

Physiologically in pregnancy there occurs an increase in blood and plasma volumes. Since the increase in plasma is relatively greater than that of erythrocytes, the hemoglobin and red cell counts are proportionately lower, accounting for the so-called "physiologic anemia of pregnancy."

In preeclampsia and eclampsia the opposite is true, that is, there is a decrease in blood and plasma volumes, and the alteration in these volumes is associated intimately with the clinical picture. An increase in blood volume or hemodilution is followed by clinical improvement in the patient, shown by diuresis, cessation of convulsions, clearing of coma, and disappearance of other symptoms. A decrease in blood volume is followed by a return or aggravation of symptoms. The phenomenon of this group of diseases is the fact that, when the edema is subsiding and diuresis is at its maximum, the serum proteins are at their minimum. These changes in blood and plasma volumes in the toxemias of pregnancy are best observed by serial determinations of serum protein and cell volume.

In treatment of eclampsia the use of glucose constitutes our chief method of approach; 500 to 1000 cc. of 20 per cent glucose may be given slowly over a period of forty to sixty minutes and repeated two or three times daily. The urine excreted during the following four hours should equal at least 60 per cent of the amount of fluid injected. Enough glucose is given to produce a urinary excretion of 30 cc. per hour as a minimum. If we are not successful with 20 per cent glucose, then 800 cc. of 30 per cent glucose may be tried. In the more severe cases one can use 300 to 500 cc. of a 30 per cent, or 100 to 200 cc. of a 50 per cent solution of glucose.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

The use of physiologic saline or Ringer's solution is contraindicated in treatment of preeclampsia and eclampsia, a fact that is too often forgotten. In some cases, when everything else fails, the use of gum acacia should be considered. Since several fatalities have been reported, the use of gum acacia is reserved as a procedure of last resort.

As an interesting sidelight of this paper we might consider briefly the production of isoimmunization in pregnancy. Considerable work has been done in the past few years regarding the etiology of erythroblastosis fetalis. It has been proved pretty well that in most cases the mother is Rh-negative and the father Rh-positive. Rh is an antigen present in the red blood cells of all Macacus rhesus monkeys (hence the name) and in 85 per cent of human blood, only 15 per cent of the population being Rh-negative. The infant inherits the Rh factor as a dominant characteristic from the father and initiates in the mother's blood the formation of antibodies which pass the placental barrier. These agglutinins cause in the fetus the picture of erythroblastosis fetalis, that is, abnormal red cell destruction, the erythropoiesis, the hepatic injury and dysfunction.

Many of the transfusion reactions in postpartum or pregnant women can be explained on a similar basis, especially if the husband has been used as a donor. Levine and his associates have found other atypical hemolysins beside the anti-Rh factor in some of their cases. These hemolysins apparently have the same origin as the anti-Rh factor, that is, the result of isoimmunization of the mother. To safeguard against these reactions it is suggested that it is safer to use blood relatives of the mother rather than those of the father in transfusions for pregnant or postpartum women. By crossmatching both at room temperature and at 37° C. these atypical agglutinins may be detected prior to transfusion.

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CALICEAL CALCULOSIS*

Alexander Hamilton Peacock, M.D.
SEATTLE, WASH.

The "why and wherefore" of the formation of renal calculi is still intriguing. The many hypothyses of vitamin deficiency, infection, obstruction and hyperparathyroidism have their adherents, supportive research studies and clinical experience. But the problem has not been solved. We are still in the dark, and until such time as we can definitely demonstrate the initial steps of the development of stone, we will not know correctly how to prevent their formation.

Constant research is going on to get to the basic cause of calculus disease. One of the outstanding contributions of recent years is that of Randall[1] of Philadelphia. He lucidly points out that stone is only a symptom, there must be a precalculus lesion, and precipitation of salts is merely incidental to the primary pathology (fig. 1). For this condition a new term has been coined, calculogenesis, to cover the various stages that antedate the symptoms when a calculus has developed and is causing clinical symptoms. Most studies of renal calculi start here, after the stone has developed (Herman[2]).

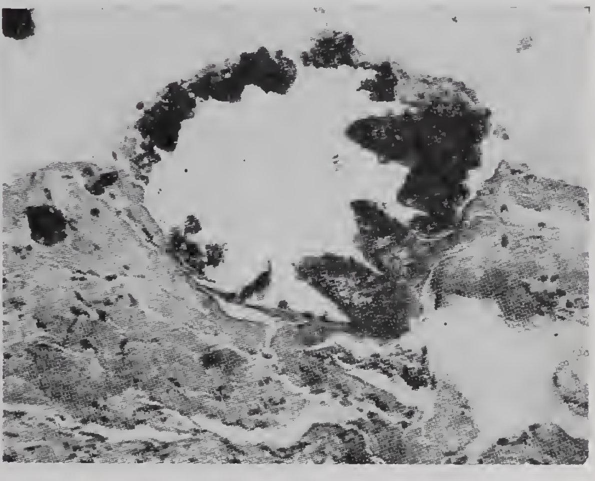

Fig. 1. Calcium plaque on renal papilla (Herman).

A distinction is made between primary and secondary renal calculi. In the primary group we place those stones for which there is no apparent causal factor in the kidney, pelvis or ureter, as anomalies, obstructions, recurrent hematuria, persistent infection or recognized metabolic fault.

Randall further points out that relatively few

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[1] Randall, A.: Etiology of Primary Renal Calculus. Internat. Obstr. Surg., 71:209-240, 1940; Role of Papillary Pathology in Renal Calculus Formation. Penn, M. J., 44:838-840, April, 1941; Papillary Pathology as Precusory of Primary Renal Calculus. J. Urol, 44:580-589, Nov., 1940.

[2] Herman, L.: Etiology and Pathogenesis of Urolithiasis. Practice of Urology. 783-789. W. B. Saunders & Co., Philadelphia.

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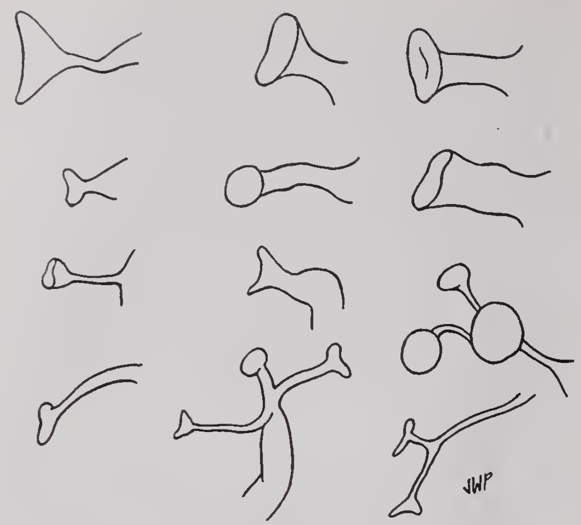

Fig. 2. Types of minor calices. Traced from case roentgenograms.

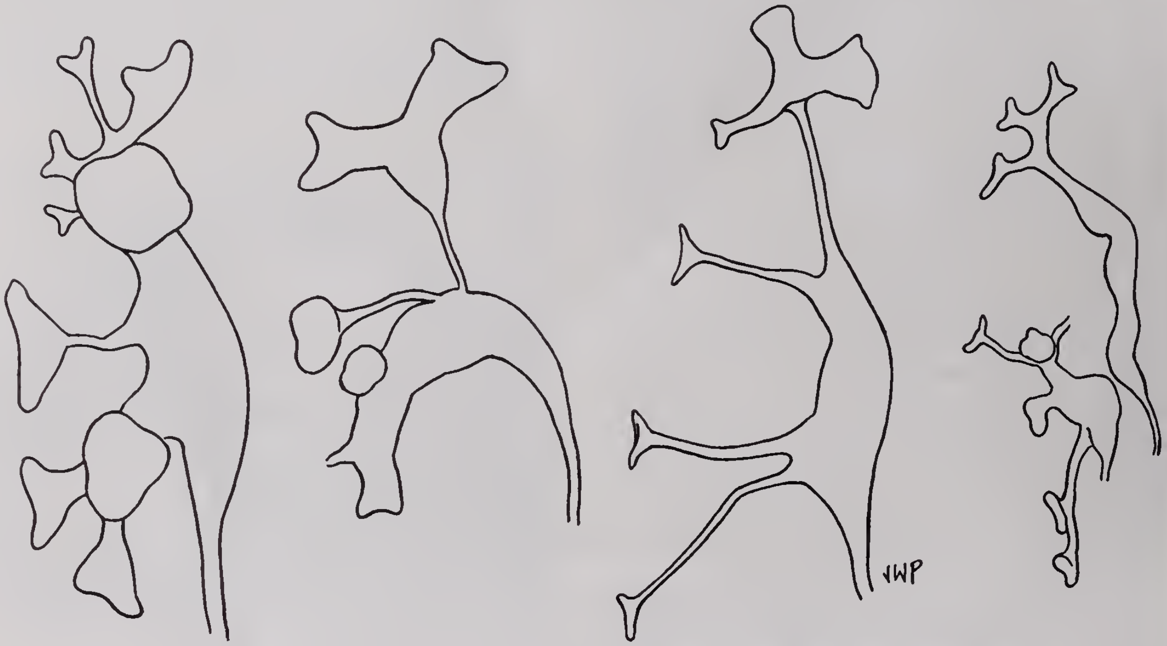

Fig. 3. Types of pelvis and calices, taken from roentgenograms. Many exhibit constricted infundibula.

calculi develop within the tubules of the kidney, that they must form in the calices or pelvis; that in the absence of obstruction the calculus must remain relatively stationary while growing, or it would be washed down the ureter while of minute size.

It is well known, by chance roentgenograms, that small calculi do remain in a calix for years without giving symptoms. There must be some pathologic reason for stone to form in a calix, favoring the precipitation of normal urinary crystals, and the location of this crystallization would be most likely to occur upon the actively functioning renal papillae.

Upon such grounds Randall based his research. A study of 265 voided calculi by means of lenses, a visible facet, evidence of mural attachment, was found in 40 per cent of these specimens. The next step was autopsy studies. From December, 1935, to December, 1938, 1154 pairs of kidneys in consecutive autopsies were carefully sectioned and minutely examined. Two hundred and twenty-seven individuals (19.6 per cent) showed calcium deposits on one or more papillae. Sixty-five individuals revealed a primary calculous growth on a renal papilla.

The term given this lesion was calcium plaque, described as a cream colored area near the tip of a renal papilla which appeared to be subepithelial. Enough pathologic slides of these encrusted papillae have been studied to firmly establish this hitherto unrecognized condition in the life cycle of calculogenesis. These calcium plaques have been produced experimentally in animals by bacterial toxin, by creating a deficiency of vitamin A, and by increasing production of parathyroid hormone with an associated disorder in the metabolism of calcium and phosphorus. Once these lesions are established on a papilla and urinary salts are deposited, the growth of a calculus is merely a question of time.

Twinem[3] has further studied these caliceal plaques. He points out, that which we all have observed, the various types of calices. Some are connected to the renal pelvis by wide tubes or canals, while others are long and narrow (fig 2).

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5. Twinem, R. P.: Relation of Renal Stone Formation and Recurrent Calyceal Pathology. J. Urol., 44:596-601, Nov., 1940.

In the latter type there can arise a condition he calls dysuric calix, that is, a calix which, by reason of a constricted infundibular portion, or because of its dependency as in the inferior calices or the angle at which it joins the pelvis, forms a favorable nidus or breeding place for stone (fig. 3). Ten of these caliceal stone cases are reported, in which cures were effected by making a V-shaped resection of the calix in question (Narath[4]).

This ground work has been laid to show that a kidney may harbor one or many stones, and never symptoms of colic or obstruction appear. Many cases might have been used, but there is one which particularly well illustrates this caliceal calculogenesis.

CASE REPORT

A young, married white woman of 23 years was referred in August, 1939, by A. W. MacKay of Portland, Oregon. The patient lived most of her life in Los Angeles, where the diagnosis of bilateral, renal calculi was made by E. E. Kessler. These stones were so extensive that surgery was not advised. The duration of her symptoms was three and one-half years of backache, frequent, burning urination, hematuria, pyuria, periodic fever and chills. These latter developed at fairly frequent intervals, and were quite debilitating.

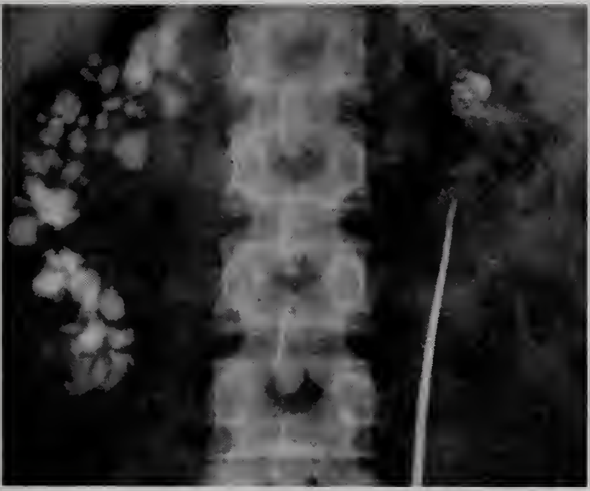
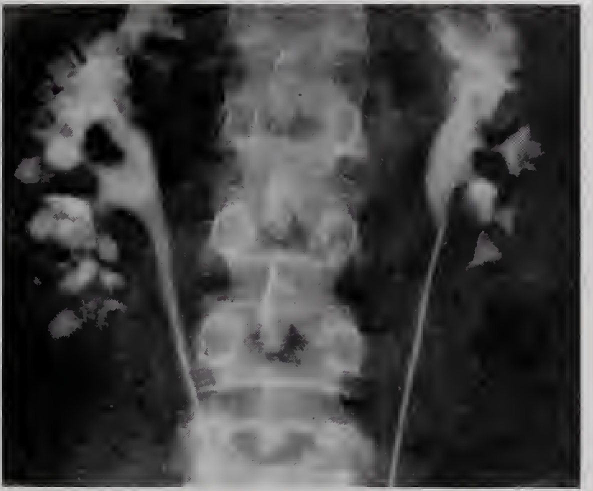


Fig. 4. Woman of 23 years. Acute pyelitis every 6 months, no colic, no visible calculi ever voided. Stones all in calices. Right side, all calices occupied. Left, superior only.



Fib. 5. Same patient, pelvis injected with contrast solution, showing position of calculi.

At this first examination, her weight was 156 pounds, height 5 ft. 6½ in., blood pressure 110/60, temperature 98° at 2:15 p.m. Urinalysis: specific gravity 1.011, albumin a trace, sugar negative, pH 5.8. Microscopic: many small gram-negative rods, moderate number of pus and red blood cells. Blood chemistry: urea nitrogen 25 mg., creatinine 1.5 mg., nonprotein nitrogen 49 mg., phosphorus 5.5 mg. and chlorides 500 mg. per 100 cc.

Separate kidney urines: pus from right side, many gram-negative rods. Left urine: no pus nor bacteria on smears. Indigo carmine came through in 3 minutes on each side, with a slightly better strength of dye on the left side.

A roentgenogram demonstrated rather large kidneys, located in a high position. The calices of the right kidney were studded with small calculi, none appearing in the pelvis (fig. 4). The infundibulum showed narrow tubes. These calculi must have been forming over a period of years, yet this patient never suffered renal colic nor passed a calculus to her knowledge.

On the left side, there was a group of stones in the superior calix. Again we found a contracted infundibulum leading to the pelvis (fig. 5). Why did none of these stones escape into the pelvis? It can be explained by the hypothesis of Randall, formation of a calcium plaque on a papilla, building up of a calculus, and its firm attachment by a facet to the papilla until its size was too great to move through the infundibulum to the renal pelvis.

As stated previously, this patient suffered repeated attacks of pyelitis. During the past year the greatest discomfort and tenderness was in the left upper abdomen and back. During one of these attacks, her urea nitrogen measured 82.5 mg. and creatinine 2.25 mg., showing the effect on the renal function. After the fever subsided there was a return to normal, urea nitrogen 7.0 mg. and creatinine 0.7 mg.

On November 1, 1941, a caliceototomy was done. The upper pole of the left kidney was incised, opening into the superior calix. In this cystlike cavity were a dozen various sized stones. Instead of floating around, most of them were adherent, and removed with difficulty. The infundibulum was enlarged into the pelvis. The calix was not excised by a V-resection as advocated by Twinem. There was a desire to conserve as much renal tissue as possible. Another reason for relieving the left, or better kidney first, was the remote possibility that extensive surgery might be necessary on the more involved right kidney. Since this operation, there has been no pain in the left side, but there occurred all the symptoms of a most severe, right-sided pyelitis.

Is further surgery advisable and if so, what would be the procedure of choice? This case report was made primarily to call attention to the earliest stages of calculogenesis and to the role that constricted caliceal tubes play in imprisoning fully developed stones within a caliceal cavity. I have been interested mostly in the mature stones after they have caused acute clinical symptoms, as colic and hematuria. The greater interest seems to lie in the microscopic changes on the renal papillae. At this point lies our opportunity to circumvent the growth of primary renal calculi.

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[4] Narath, P. A.: Hydromechanics of Calyx Renalis. J. Urol. 43:145-176, Jan., 1940.

CORRECTION OF LOP EARS*

Herbert E. Coe, M.D.
SEATTLE, WASH.

The condition known as "lop ear" is a congenital anomaly caused by an irregularity in the development and fusion of the several components which enter into the formation of the external ear. These consist of a ridge and six small eminencies, or tubercles, surrounding the external end of the first branchial cleft.

In the orderly course of events the ridge from which the helix develops grows rapidly and projects forward over those tubercles which are to form the antihelix and tragus. These tubercles then develop, gradually pushing the ridge upward and backward into the normal position of the upper and posterior edge of the pinna. Failure or irregularity of this stage of growth results in either complete or partial absence of the antihelix and its fossa.

The helix remains in an abnormal forward position and the concavity of the concha passes smoothly out to the edge of the helix. That all degrees of variation in this process may occur is recognized when one has become "ear conscious" and casually observes the ears of associates and passers-by.

The degree to which the ear stands out from the head and the angle at which it projects are determined by the position, size and extent of the antihelix. To a lesser degree the projection is influenced by the size and shape of the concave portion of the concha. Thus it will be seen that this condition is due to the shape of the developing cartilaginous framework of the ear and not to posture or temporary pressure which may be exerted by a bonnet or pillow during early infancy.

Aural cartilage is extremely resistant to moulding and its elastic power of returning to its original form will even overcome the strength of the postauricular fascia. On account of this quality a structural change in the shape of the cartilage is necessary for effective treatment. The true "lop ear" cannot be corrected by any amount of taping, bandaging or use of retentive caps, nor by an operation which removes a section of skin and attaches the skin or cartilage to the postauricular fascia. Such an operation results ultimately in a reduction of the postauricular sulcus and in drawing the scalp up toward the back of the ear which continues to project as before.

The technical details of the surgical procedure will depend upon the shape of the ear and the extent of correction desired, but the fundamental principle is the formation of an adequate antihelix. In some instances it will be advisable to supplement this by the removal of a section of the conchal cartilage.

The location of the proposed antihelix may be outlined by puncturing the entire thickness of the ear from the anterior surface with a needle carrying a dye, but it has been my practice to work entirely from the posterior surface, avoiding breaking the anterior skin surface even by a needle puncture. A generous incision is made on the posterior surface, reflecting the skin and subcutaneous tissues. Reflection of the perichondrium is difficult because of its firm attachment but with care and persistence it can be accomplished. The cartilage may then be carefully thinned to the anterior perichondrium along the proposed line, or it may be cut by several parallel incisions about one millimeter apart and two or three of the narrow strips removed.

This method produces a more normally rounded antihelix when the cartilage is buckled backward than the sharp one which results from simple incision and stitching the adjacent surfaces of cartilage back to back. In some instances the cartilage remains in position without sutures by simply holding it in position over a small rolled dressing after the skin is closed, but in others it is advisable to maintain the newly formed antihelix by two or three stitches of 5-0 chromic catgut in the perichondrium. The excess of skin is excised and the incision closed with interrupted or subcuticular stitches of stainless steel wire, gauge 36. When excision of a portion of the cartilage is necessary, both surfaces of the cartilage should be freed, the necessary portion removed and the edges overlapped, a procedure which has been excellently described by MacCollum.[1]

Postoperatively, the ear is held in position over a small roll of gauze by adhesive strips and a stockinette cap, sufficient dressing being used to maintain even, firm pressure. The dressing should not be changed unless absolutely necessary for two weeks, when the stitches may be removed and instructions given to continue wearing the cap at night for at least a month longer.

During the operation it is essential to avoid injury to the skin of the anterior surface of the ear and to be particularly careful regarding hemostasis. A hematoma will become organized and give a result resembling a pugilist's cauliflower ear.

One of the greatest difficulties is in making the ears symmetrical, and to obtain a satisfactory result secondary correction of variations is occasionally necessary.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

[1] MacCollum, G. W.: The Lop Ear, J. A. M. A. 110: 1427-1430, April 30, 1938.

BILE DUCT IRRIGATION*

R. D. Forbes, M.D.

SEATTLE, WASH.

As disease in the gallbladder is usually but a part of that which involves the biliary channel, its removal is only one step in its cure. The precalculous state, involving infection of the bile ducts, is still present and drainage has long been practiced for its relief. Irrigation of the ducts has merit in contributing to the cure of this infection. Saline at the temperature of 105° to 110° can be introduced through the T-tube and daily lavage carried out. Frequently small calculi or calculous material can be removed by this method, and sometimes for long periods the washings will contain debris indicative of continuing infection. For coincidental infection of the pancreas this method has value. Similarly, postoperative biliary colic not due to calculus is improved by irrigation.

MacDonald[1] has recently described his technic for perfusion of the biliary channels and his results are convincing. His method enables the pressure within the ducts to be measured during irrigation and this can be increased or decreased by such drugs as morphine on the one hand and nitroglycerine on the other.

Whereas drainage of the bile ducts by a T-tube is usually carried out for a relatively short period, it may be used to advantage for months or even a year or more. The following is a report of a patient, in whom this was used with good results.

CASE REPORT

S.C.A., age 72, entered hospital January 18, 1941, for relief of pain, chills and jaundice. The gallbladder containing stones had been removed fifteen years previously and during the interval he had suffered recurring attacks of pain with occasional periods of jaundice. Exposure of the common duct revealed its dilatation to a diameter of three cm. Calculi and calculous material completely filled its lumen. After their removal, irrigation of the hepatic duct was carried out and a large number of small calculi and debris were removed. The index finger was readily passed into the duodenum. A T-tube was inserted for drainage and the abdomen closed. This tube was fixed to the skin by a fine silk-worm gut suture which was tied around it. In a few hours the tube broke off at the line of this suture and it was recognized that the tubing was soft and easily torn. The patient made a quick and happy recovery from the operation and left the hosptial on the sixteenth day.

Apprehension was felt about the cross piece of T-tube, as the usual notch had been cut to facilitate removal. Our fears were not groundless and two weeks later the long arm and the upper portion of the cross piece came out on the patient's dressing, leaving the short and lower arm in the common duct.

Although improvement continued and his health was enormously improved, he again began to have symptoms of pain about seven months later. Within another month chills, fever and jaundice recurred and operation was carried out to remove the piece of tubing resident in the common bile duct. The bile ducts had again become packed with calculous material and after its removal another T-tube without a notch was introduced.

Daily irrigations with hot saline have been carried out for the past six months. The tube is left open for two hours after irrigation and the biliary collection inspected for debris. This has gradually lessened in amount and today is infinitesimal, consisting of necrotic material and bile salts. Bacteria cannot be cultured. The T-tube will soon be removed and it is felt that the prospect of further recurrence is slight.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

[1] MacDonald, D.: Postoperative Perfusion of Biliary Ductal System. Canad. M. A. J., 43:411,418, Nov., 1940.

TOTAL GASTRECTOMY*

John A. Duncan, M.D.

SEATTLE, WASH.

Total gastrectomy has been reserved in most instances for those patients suffering from a diffuse linitis plastica type of carcinoma or in whom there is more or less complete involvement of the stomach by leiomyosarcoma. The following is a case report of a rather young woman with a long history of gastric ulcer symptoms, with operative findings of malignant ulcer in the cardia and local metastases along both curvatures and in whom total gastrectomy was successfully performed.

CASE REPORT

Mrs. L. K., a thirty-seven year old housewife, was admitted to Maynard Hospital, Seattle, on December 4, 1941. Her chief complaints were epigastric pain and vomiting.

She dated the onset of her illness to a time twelve years ago, when she noticed epigastric burning, gastric eructations and nausea, all occurring two to three hours after meals and during the night. At times she had periods of vomiting, in which she could retain no food for three to four days. She consulted her local physician, who advised an ulcer management and she rapidly improved on this regime. She had exacerbations of her symptoms on occasions but was relatively well until June, 1941. At this time the epigastric distress returned and has been more or less constant since, together with poor appetite, frequent periods of vomiting and a weight loss of approximately thirty-nine pounds. She also showed a marked loss in strength and inability to carry on her housework. There was no history of hematemesis or tarry stools.

The first gastrointestinal roentgenograms were taken one week before admission and showed a marked filling defect high on the lesser curvature of the stomach with a tendency to hour glass constriction at this point. A diagnosis of gastric ulcer with possible malignancy was made by her internist who placed her on a rigid diet, and referred her for surgical treatment.

On admission to the hospital the essential physical findings were pallor, evidence of considerable weight loss, and an area of local tenderness to deep pressure in the epigastrium, immediately below the xyphoid process. Examination of the blood showed 58 per cent and 9.3 grams of hemoglobin, 3,500,000 red blood cells and a normal white blood count. Vitamin C was 1.2 mg. per cent, serum protein 5.45 mg. per cent and urinalysis was essentially negative. Gastric acidity was normal.

The patient was prepared for surgery with a preliminary transfusion, a high caloric soft diet, vitamins and nightly gastric lavage. At operation there was a malignant gastric ulcer high on the posterior wall of the stomach at the junction of the body with cardia and extending onto the lesser curvature. It was densely attached posteriorly to the pancreas. In addition, there were several large nodes along the greater curvature and two or three smaller ones in the lesser omentum near celiac axis. Frozen section biopsy of a gland from each of these groups showed adenocarcinoma. There was no invasion of glands about the pylorus or common duct, and there was no gross evidence of spread to the liver. The liver, gallbladder, transverse colon, pancreas and spleen all appeared normal. Further exploration was not carried out.

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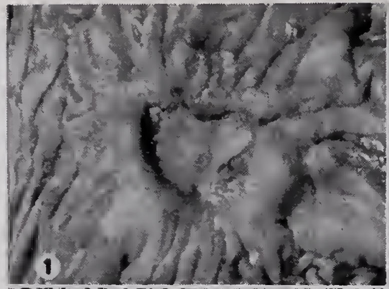
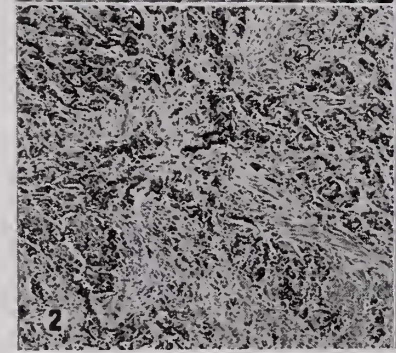
*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.





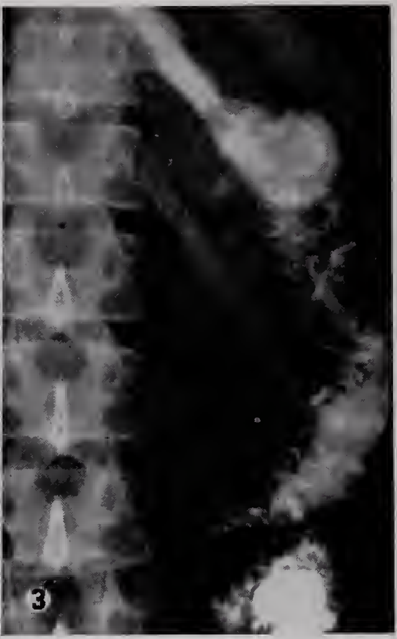


Fig. 1. Malignant ulcer in cardiac end of stomach. Ulcer symptoms for twelve years.
Fig. 2. Section from lymph node in great omentum near antrum.
Fig. 3. Shows fuction of esophagojejunal anastomosis at end of two weeks.

A six inch upper left rectus muscle retracting incision was made and abdomen opened. After exploration of the upper abdomen the entire great omentum was separated from its attachment to the transverse colon and the lesser sac opened. Vessels about pylorus were divided and ligated, after which the duodenum was transected in its first portion and inverted with two layers of fine chromic catgut, reinforced with interrupted silk sutures. Dissection was then carried up along the lesser curvature to the celiac axis and the attachment of the ulcer to the pancreas was dissected free,, removing a small amount of pancreatic tissue. The ulcer was situated so high that there was not enough stomach wall to use for anastomosis, so it was necessary to carry out a total gastrectomy. The gastric ulcer is shown in figure 1. A microscopic section is shown (fig. 2) from a gland in great omentum.

The gastrolienal ligament was divided and dissection carried up to the esophageal hiatus in the diaphragm. The vagus nerves were divided and the esophagus drawn downward a distance of about one inch. The stomach was then rotated forward to lie on the chest wall and a loop of jejunum about eighteen inches from its origin was sutured behind the esophageal hiatus to the crura of the diaphragm with interrupted silk sutures. A small opening was then made into the posterior wall of the esophagus and jejunum and suturing began with fine chromic intestinal suture. The esophagus was then divided completely and the anastomosis completed, so that the opening of the esophagus was into the distal limb of the jejunum (fig. 3). A Levine tube had previously been introduced into the distal limb of the jejunum. The anterior portion of the anastomosis was reinforced with interrupted silk sutures and a peritoneal cuff of diaphragm was sutured anteriorly over the anastomosis.

After draping, 10 Gm. of sulfathiazole were introduced into the upper abdomen. The incision was then closed; 500 cc. of citrated blood were given during the last hour of operation. The immediate postoperative condition was good.

The patient's convalescence was exceedingly smooth for a period of ten days. The nasal tube was removed on the third day and a progressive soft diet begun. At the end of ten days she was taking a well balanced diet and appeared in good condition except for daily rise in temperature to about 101°. Examination at this time showed dullness over the lower chest and diminished breath sounds.

At the end of the second week the patient was fluoroscoped and an accumulation of fluid in the left pleural cavity determined. Barium by mouth at the same time showed excellent function of the esophagojejunal anastomosis. On the same day 1,000 cc. of straw colored fluid was aspirated from the left pleural cavity. The fluid showed a specific gravity of 1.018 with no tumor cells and occasional pus cells. There were no bacteria present. The pleural cavity was again aspirated three days later and 200 cc. of similar fluid removed. There was no reformation of fluid and, when the patient was discharged on January 11, 1942, there were no evident chest findings.

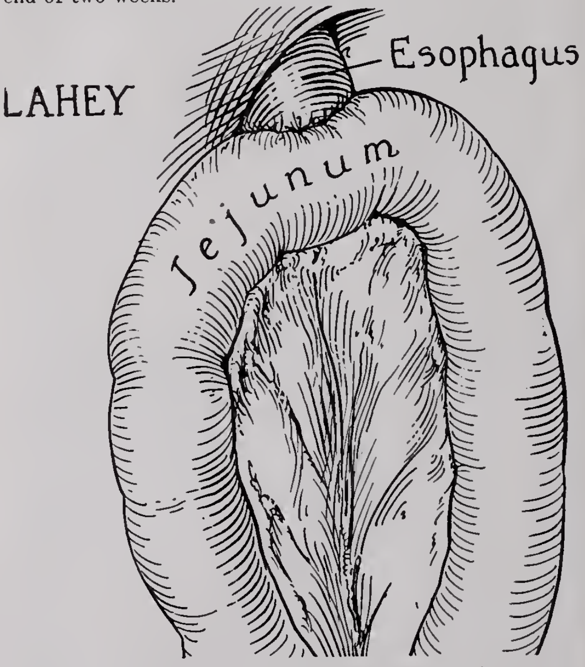


Fig. 4. Lahey type of end-to-side esophagojejunostomy. Flaps of peritoneum are fashioned to cover anastomosis.

At this time the patient appeared strong, was taking three meals a day with supplementary small feedings between. There was no distress on eating, no indigestion and the stools were of normal consistency and appearance. In the three months since operation she has gained five pounds in weight and is able to carry on her housework.

Total gastrectomy, in contradistinction to subtotal resection, signifies removal of the entire stomach together with a portion of adjacent esophagus and duodenum. Nothing short of this radical procedure would have removed all evident carcinomatous tissue in the case presented. While the ultimate outlook is not good, the patient has certainly been most comfortable in the interval since her operation. The patient living longest after total gastrectomy in Allen's[1] series showed a similar situation with highly malignant adenocarcinoma and metastases to the regional lymphnodes.

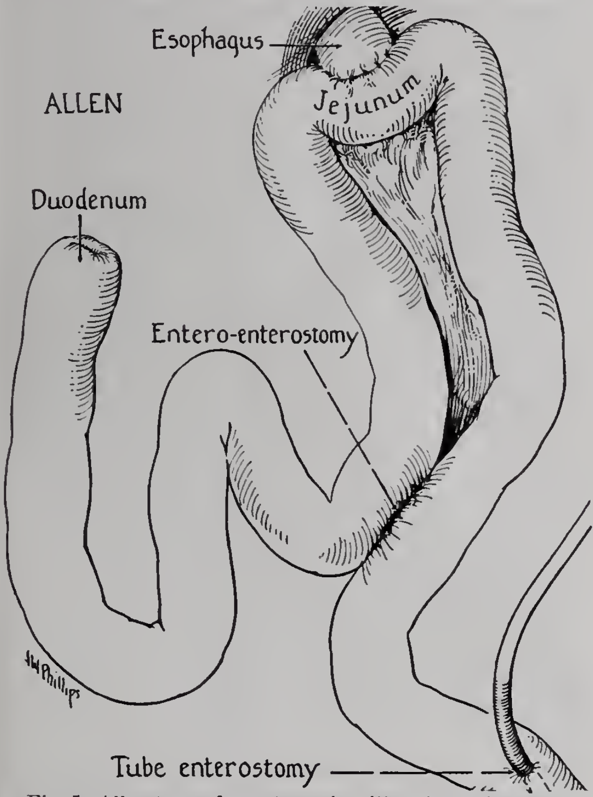


Fig. 5. Allen type of anastomosis with enteroenterostomy and tube jejunostomy for feeding purposes.

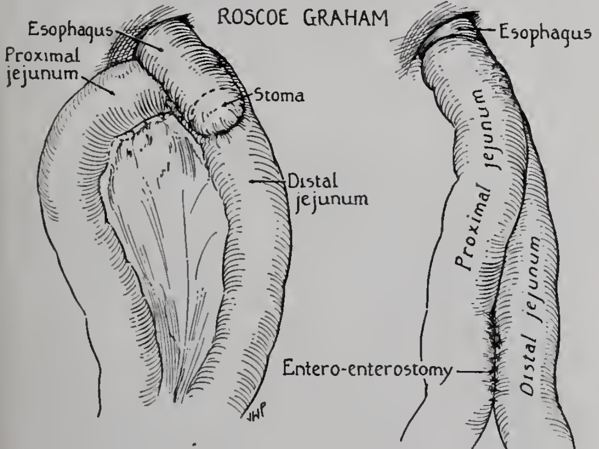


Fig. 6. Anastomosis devised by Graham with accompanying enteroenterostomy.

Three variations in technic of esophagojejunostomy by Lahey, Allen and Graham are depicted in figures 4, 5, 6. Lahey[2] has reported a series of thirty-three total gastrectomies with nine fatalities. Allen has reported sixteen such operations from the Massachusetts General Hospital with a fifty per cent mortality. In the series of nineteen cases reported by Graham[3] from Toronto General Hospital, five survived the operation.

While total gastrectomy represents a most formidable and radical type of surgery, it seems justifiable in selected cases and nothing short of it will at present give certain patients a chance of cure. That people may be comfortable, relatively free of digestive discomfort, and are not confined by dietary restrictions has been the experiences of most surgeons in this operation.

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[1] Allen, A. W.: Total Gastrectomy for Carcinoma of Stomach. Am. J. Surg., 40:35, April, 1938.

[2] Lahey, F. H.: Combining Splenectomy with Total Gastrectomy. Surg., Gynec. & Obst., 73:341, Sept., 1941.

[3] Graham, R. R.: Technique for Total Gastrectomy. Surgery, 8:257, Aug., 1940.

THREE C'S OF SURGICAL HEALING*

Edwin A. Nixon, M.D.
SEATTLE, WASH.

One hundred years ago the development of anesthesia, closely followed by the work of Lister and Pasteur, enabled surgeons to do clean surgery. As a result, all surgeons have become fundamentally interested in wound healing which would be primary and prompt. Among many other factors which contribute to primary and prompt wound healing are vitamin C, cellophane and cotton, the three "C's."

Maintenance of health and the continuation of life itself depend upon the supply of certain substances other than fuel that the body cannot always manufacture for itself. Lack of one or more of these in the diet or development of any condition which interferes with their normal absorption or utilization produces certain characteristic symptoms which are more or less specific for the missing substance in question. There has been tremendous advance growth in the knowledge of vitamins and their deficiency diseases in the past few years. Also, there has been a tendency on the part of certain high pressure agencies to offer vitamins as a panacea for all ills. This has led to the adoption of a feeling of therapeutic nihilism for vitamins by many surgeons.

According to Snell,[1] there are three kinds of vitamin deficiency states found; (1), those primary, due to deficiencies in diet; (2), those which are secondary to disease of the gastrointestinal tract; (3), those which develop during postoperative courses, pregnancy and acute infection.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

[1] Snell, A. M.: Deficiency States and Their Treatment. J. Iowa M. Soc. 30:381-384, Aug., 1940.

When one analyzes these deficiency states, it is remarkable to find that more persons do not have symptoms of a deficiency disease. Probably most of us as normal adults are extremely resistant to a bad diet. Hepatic damage is definitely responsible for failure to absorb and utilize many of the vitamins.

In gastrointestinal disease, the symptoms of deficiency usually develop because of nausea, vomiting, diarrhea, loss of essential secretions such as bile, and pancreatic juices. Also, there is a loss of absorbative surface in cases of pylorospasm, surgical short-circuiting and removal of portions of the stomach. Practically every patient with a gastrointestinal disease has one or more deficiencies present. Most of these pass unrecognized and untreated.

Treatment of deficiency cases is an essential part of any therapeutic program outlined by the surgeon. It is especially true, if surgical treatment is contemplated. It does not follow that every patient with a gastrointestinal disorder should be dosed indiscriminately with vitamins. If the patient does have any absorbative defect or anatomic obstruction and is taking a fair amount of food without any interference anatomically or absorbatively, there is little danger of vitamin deficiency.

VITAMIN C

Vitamin C deficiency of sufficient magnitude to cause scurvy is rarely seen. To determine its prevalence, a group of fifty-six apparently well students were studied by Wolfer and Hoebel[2] as to the vitamin C content, and twelve showed a deficiency in the prescurvy level. Normal level is indicated as varying from 0.6 to 1.0 mg. per cent of ascorbutic acid. Vitamin C deficiency should be thought of and determinations made in the following types of patients: (1) those with a deficient diet, voluntary or because of doctor's orders, (2) those taking large doses of alkalis by mouth, (3) those with obstructive gastrointestinal lesions, particularly by the pylorus or above, (4) those with a history of vomiting over long periods, (5) those with hypermotility of the small intestines, and (6) syphilitics and alcoholics.

Healing of wounds is dependent to some extent on the concentration of vitamin C. It is affected by many intrinsic and extrinsic factors. Certainly the patient's nutritional status is one of the most important intrinsic factors. We prepare our patients for operation by the administration of fluids, carbohydrates and salts, but this diet is often inadequate or not fully balanced and with a lack of consideration for the amount of vitamins present. If a transfusion is given, it is generally because of a frank anemia rather than because of a protein deficiency depletion.

Postoperatively, there is a deficiency in vitamin B and C and a wound cannot be expected to heal unless essential building materials necessary to its repair are present. Vitamin C is necessarily one of these. Many patients with an ulcer have a borderline deficiency in vitamin C because they have the idea that orange juice will injure their ulcer.

Wolfer and Hoebel reported on a series of twenty cases checked for vitamin C. They found 90 per cent definitely had low levels, and 60 per cent showed blood levels of 0.2 mg. per cent or less, which is in the level of potential failure of wound healing. Lynman and Ingalls[3] studied groups of guinea pigs on normal and vitamin C deficient diet. In all cases, after the fifth postoperative day, the animals on normal diet showed greater wound strength. Gross examination of the ruptured wounds in deficient animals showed changes strikingly resembling those found in noninfectious wound disruption in humans. Microscopically there was evidence of fibroblastic proliferation with a marked decrease in intracellular material and a disorganized arrangement of fibroblasts. There was also consistent failure of the corium to unite in the deficient group.

Vitamin C determination is a routine laboratory procedure at King County Hospital in all gastrointestinal cases and those with poor nutritional status. Elective operations are postponed and emergency cases receive treatment postoperatively if low in vitamin C.

COTTON SUTURE MATERIAL

There has always been dissatisfaction with catgut as suture material and Halstead initiated the use of a nonabsorbable suture in surgery, employing silk. The methods which he employed were outlined by Whipple as follows: (1) avoid tight sutures, (2) avoid mass ligatures, (3) avoid blunt dissection, (4) avoid careless hemostasis, (5) use fine grades of silk, (6) don't combine silk and catgut, (7) use silk in sterile field only, (8) avoid continuous sutures.

These rules definitely apply to the use of cotton as a suture material, except No. 7. Meade and Ochsner[4] found that, when catgut was employed in clean wounds, 14 per cent of these areas became infected, whereas this followed in only 4 per cent of those clean wounds sutured with cotton.

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[2] Wolfer, J. A. and Hoebel, F. C.: Significance of Cevitamic Acid Deficiency in Surgical Patients. Surg., Gyec. & Obst. 69:745-755, Dec., 1939.

[3] Lyman, T. H. and Ingalls, T. H.: Vitamin C. Deficiency and Wound Healing: Experimental and Clinical Study. Ann. Surg. 105:616-625, April, 1937.

[4] Meade, W. H. and Ochsner, A.: Relative Value of Catgut, Silk, Linen and Cotton as Suture Materials. Surgery, 7:485-514, April, 1940.

Another observation of importance in the evaluation of wounds sutured with cotton was that in those which were contaminated or infected, 47.6 per cent healed by first intention. This is not true in the case of silk, where only 30 per cent healed in this manner. Cotton is better adapted for use in contaminated or infected fields than is any other suture material.

The technic in employing cotton must be acquired because it is handled differently than other suture materials, even silk. Meade and Ochsner have shown that tensile strength after boiling and autoclaving of cotton remain greater than of any other materials such as linen or silk. Another feature of considerable interest reported by them is that after a period of eighteen days the tensile strength, after tissue implantation of cotton, is practically the same as when introduced. This is not true of any other suture material. Silk has a tendency to prolong drainage of infected wounds, and this is probably due to the fact that granulation tissue invades the interstices of the silk, which prolongs the infection, and this is not true in wounds closed with cotton.

The reaction of tissue to the implanted suture was graded by Ochsner by the amount of persistence of leukocytic infiltration, the amount of serum and fibrin, the appearance and time of fibroblasts and the length of time necessary to produce final healing. Accordingly, catgut, by producing the most reaction and the slowest healing, was graded 4, linen 3, silk 2, and cotton, producing the least reaction and the earliest healing, was graded 1.

Therefore, because of the satisfactory tensile structure, high coefficient of friction, stability on exposure to heat and moisture, and failure to produce any great tissue reaction, I have found that cotton is most satisfactory as suture material.

Another factor is the low cost of cotton. While this is not of primary importance, it is a desirable feature, particularly on a large charity service. Ochsner reported last spring that use of cotton suture material on his service had saved the charity hospital approximately $8,000 in expense for suture materials during the past year.

I have had the experience of using this suture material while doing surgical work in both clean and contaminated fields, with and without drainage. Cotton has proved far superior in preventing wound dehiscence and shortening the healing time without sinus formation as compared with other of the suture materials. Local edema and pain are lessened and the skin mobility, especially after thyroid surgery, is most gratifying to the patient. I have used No. 30 black and white cotton for sutures and No. 40 or 60 for this and gastrointestinal work.

CELLOPHANE AS WOUND DRESSING

Howes[5] reported in 1939 on the use of cellophane as a wound dressing. Since that time I have used this considerably on private and County Hospital patients and find it most satisfactory. The cellophane is No. 600, which may be cut in small sheets and autoclaved between towels. This is cut to the size of the wound when the dressings are to be applied. Prior to placing the cellophane the skin of the surrounding area is painted with tincture of benzoin and it is preferable to put a small amount of sterile vaseline over the suture line.

Hemostasis must be complete and this is not a satisfactory dressing for drainage cases. The edges of the cellophane are fastened to the skin with one inch adhesive overlapping it and on to the skin. It makes a most comfortable dressing and the wound may be observed by the surgeon. If, perchance, any moisture collects or there is any bleeding, a small opening may be made in the cellophane for evacuation of this fluid.

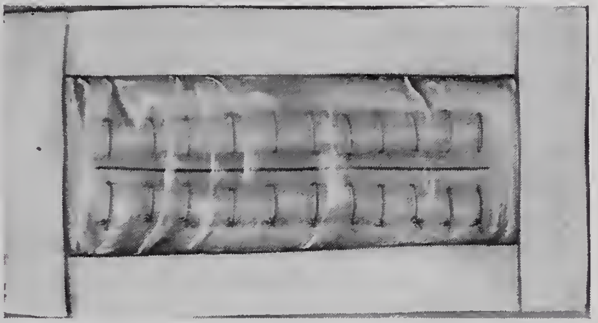

Fig. 1. shows cellophane dressing covering site of operation.

Use of cellophane is economical and I believe it prevents bacterial contamination of the wound more effectively than gauze. It is also economical in the sense that it eliminates the bulky gauze dressings and the large amounts of adhesive which are generally employed in fastening these to the wound. The patient appreciates the removal of such a dressing because of the small amount of adhesive surface in contact with the skin. This dressing is illustrated in figure 1.

SUMMARY

1. Vitamin C is one important factor in wound healing.
2. Cotton sutures are inexpensive, efficient and safe.
3. Cellophane is convenient, economical and efficient.

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[5] Howes, E. L.: Cellophane as Wound Dressing. Surgery 6:426-427, Sept., 1939.

CASES FROM TUMOR CLINIC*

Donald V. Trueblood, M.D.
SEATTLE, WASH.

It has been customary, year after year, at the time of the annual Seattle Surgical Society Clinics to present before you some material from the Tumor Clinic which has now been in existence over ten years. Each year we have selected those patients who present problems in diagnosis and therapy, considering them as patients who might walk into your office requesting your advice.

CASE REPORT

Case 1. Mr. S. S., age 77, saw us a week ago, with a tumor on his lower right jaw, giving this history: Six or seven years ago a sore spot developed underneath his lower plate on the right dental ridge. He consulted a physician regarding it, who, without taking a biopsy, treated it with roentgenization. Six years later the sore spot returned. Another physician saw him and removed this area, asking for a microscopic examination of the tissue. The report was inflammatory tissue.

We saw him a year and a half later with a whitish papillary granulary lesion, 3x2½ cm., straddling the lower jaw. There are no palpable lymph nodes in his neck. When one palpates this with the finger, it is thickened, but the edges are not particularly indurated.

Have we here a new growth, a neoplasm, or is it merely excess tissue which followed previous radiation therapy and recent surgical trauma? If not a tumor, we certainly have new growth, because visible papillary elevations mean increase of tissue. Biopsy is necessary for a diagnosis. If malignant, a resection of his jaw, or a block dissection of this lesion, removing a rectangular portion of the lower jaw, would be indicated. The submaxillary triangle should also be resected. If no malignancy is found, thorough cauterization of it would be sufficient.**

Case 2 is a man, age 58, who 8 months ago noticed a soreness of his tongue. No treatment has been instituted. Examination reveals there is a hard indurated mass involving the right side of his tongue, from an inch behind the tip backward, close to the anterior pillar, encroaching upon the midline and extending down through the floor of the mouth, where the sulcus between the jaw ridge and tongue is obliterated by the tumor. The patient cannot protrude his tongue because of its fixation to the floor of the mouth.

The mass is hard and indurated, with very slight ulceration. Nevertheless, he had a recent hemorrhage from it. His Wassermann is negative. There are no palpable lymph nodes in the neck. Clinically, this is an advanced carcinoma of the tongue, but biopsy would be necessary to rule out actinomycosis and tuberculosis. The negative Wassermann eliminates gumma.

The lesion is too large for either radium or roentgen. The amount of dosage necessary from either of those agencies to cure this man would be more than the patient or his tissues could stand, and would result in severe and continuous pain. Surgical removal requires the elimination of the floor of the mouth and the entire tongue back to the epiglottis. The genioglossus muscles would necessarily be sacrificed, and possibly the geniohyoid.

The approach is made through an incision from one submaxillary region, curving around submentally to the other. Should the geniohyoid muscle be removed, the hyoid bone must be held forward to the mandible by a wire to prevent collapse of the larynx. No epithelium can be saved to cover the floor of the mouth, hence a tube surrounded by the mylohyoid muscle, platysma and skin is placed to drain saliva and possible infection, hoping to avoid neck cellulitis. Should the patient survive this effort, plastic procedures for placing epithelium in the mouth floor could be instituted. Such an operation is a tremendous undertaking for the surgeon, and a severe ordeal for the patient. It unfortunately happens to be his only choice. Should he, after being properly informed of its extent and mutilation, decide to submit, its undertaking is justified.

Case 3 is a woman 23, who came to the Clinic November 28, 1941, mentioning that she had a discharge from the left nipple. This discharge appeared, staining her brassiere and nightgown. There has been no pain.

Examination of both breasts reveals they are normal. No lumps can be found in either. When one gently palpates along the areola at 9 o'clock on the left breast, amber colored discharge appears at the nipple. Palpation elsewhere is nonproductive of this fluid. It is believed, then, that the duct which contains the discharge, and possibly a papilloma, is located in the duct radial to the nipple at 9 o'clock.

Surgery was advised for its removal. The patient returned for a surgical approach a month later, at which time no discharge could be found, and she stated no stain was found since her first examination. The surgeon decided against operation.

Recently, January 29, 1942, she returned because of discharge from the same nipple and now we find by pressure near the areola at 9 o'clock not only reproduction of the discharge, but a lump, 2x2 cm., which was certainly not there before.

We are inclined to believe there is a lesson to be learned in this case. Having found, in a certain area, the location of the abnormal duct, the surgical procedure asked for then should have been performed rather than allow what now might be a cancer of the breast to develop. However, this may be merely a benign change in the neighborhood of an abnormal duct with single or multiple papillomata present.

Some have suggested the use of roentgenization to cure amber discharge of the nipple. Such treatment will stop the discharge, but it does not give us a diagnosis of the cause of the fluid. The discharge is merely a symptom of a pathologic change in the duct, always carrying with it the possibility of a malignant background. It is, I believe, essential that an accurate diagnosis of that tissue change be made rather than be satisfied with the elimination of the symptom.

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*Read before Annual Meeting of Seattle Surgical Society, Seattle, Wash., Jan. 23-24, 1942.

**Since this report, three biopsies of this area proved that no malignancy was present, so the area has been thoroughly cauterized.

AGRANULOCYTOSIS DUE TO SULFATHIAZOLE*

REPORT OF A FATAL CASE

LEE THOMPSON, M.D.
PORTLAND, ORE.

Fatal cases due to sulfathiazole are far more uncommon than those due to the earlier used sulfonamide drugs. Carelessness in use of this group of drugs is still too frequent and in recent literature it has even been stated that serious reactions to sulfathiazole are so rare that repeated blood counts and urinalysis are unnecessary. The present case is added to the literature to call attention to the fact that this is a potent group of drugs capable of doing a great deal of good but, like all potent drugs, capable of causing death. It is hoped to emphasize that intermittent or irregular administration of these drugs is particularly apt to cause toxic reactions of severe form.

The title agranulocytosis was given to emphasize the peripheral blood picture in response to the drug given. The sternal marrow showed the picture of aplastic anemia. The reason for this is that the red cells live longer in the circulating blood.

CASE REPORT

H. L., white male, age 58, entered St. Vincent's Hospital December 27, 1941, with an acute upper respiratory infection of two weeks duration, featuring sore throat, cough, purulent nasal discharge and expectoration of purulent sputum. At the onset he had severe muscular pains and severe frontal headache.

In the two or three days before admission he had alternating chills and fever with profuse diaphoresis after each chill. He had been given sulfathiazole at home but, since there had been little improvement in the infection and he would not follow orders, he was brought to the hospital.

Past history revealed a chronic cough at infrequent intervals for several years with expectoration of grayish sputum in the mornings.

Physical examination revealed a well developed, well nourished white male who appeared acutely ill and complained of severe frontal headache, sore throat and substernal pain on coughing. Nasal mucous membranes reddened with streaks of pus along inferior meati. Posterior pharynx and soft palate were bright red in color with a streak of grayish pus on the posterior wall. A few coarse rales were heard anteriorly along course of main bronchi and also posteriorly at bases. Skin abrasion about size of a fifty cent piece over medial border of right scapula. Blood pressure 110/78, temperature 99.4°, respirations 30.

Hospital Course: On evening of Dec. 27 the patient had a chill which was followed by severe diaphoresis and marked rise in temperature (102.4°). He also complained of severe headache. On Dec. 29 he complained of marked malaise. Blood report this afternoon showed moderate leukopenia of 3,000 white blood cells, with only 9 polys and 78 small lymphocytes. Impression at this time was agranulocytosis on a sulfathiazole basis.

Roentgenogram on Dec. 27 showed thickened plcura over apices, particularly right side, moderate increase of bronchial markings throughout both lung fields and increased hilar shadows. No consolidation. Sinuses were clear. On Dec. 29 the area previously noted over right scapula had developed into a large spreading area of cellulitis. Treatment was instituted but area continued to spread. The temperature remained within normal limits until Dec. 31, when it rose to 101°.

On Jan. 2, 1942, the blood count showed 1,650 white blood cells with no polys, 99 small lymphocytes and 1 basophil. Sulfathiazole stopped at this point. Patient was still having severe chills with fever rising to 104°. On Jan. 3 he was seen by a consultant who concurred in the diagnosis of leukopenia with neutropenia due to sulfathiazole, cellulitis of skin of right shoulder, bilateral otitis media with perforation of left drum. Spleen was felt for the first time on this day. Transfusion given on Jan. 3. Pentnucleotide was given, as was liver extract.

White blood count on Jan. 3 showed 100 white blood cells with 100 per cent small lymphocytes. Another count taken on the same day after the transfusion showed 450 white blood cells with 1 per cent polys, 97 small lymphocytes and 2 immature lymphocytes. Sternal puncture on this date showed a white blood cell count of 50 lymphocytes with no other cells present. Diagnosis of marrow study was aplastic anemia. Blood count on Jan. 4 showed 200 white blood cells with 1 per cent immature lymphocytes. The other cells were undetermined.

Blood culture at seventy-two hours was negative; sputum showed many gram-positive diplococci but there was insufficient amount of sputum for typing. Transfusion given on Jan. 5. Kahn, which had not been previously reported, was found to be strongly positive on this date. Patient's condition was extremely serious at this time and white blood count taken before transfusion showed 50 white blood cells. He expired at 2:20 a.m. on Jan. 6. No postmorten was obtained.

*Final Diagnosis*s Agranulocytosis on sulfathiazole basis.

DISCUSSION

This patient had received sulfathiazole at home but it was discontinued for about two days prior to admittance. After admittance the sulfathiazole was resumed at the rate of 45 grains daily, receiving a total of 235 grains. In addition he received about 160 grains of emperin. There is a possibility that the combination of the two drugs may have been responsible rather than the sulfathiazole alone.

This combination of sulfathiazole with other drugs we think was demonstrated in a case, also fatal, which we had earlier in the year. In that case the patient, a physician, had been taking dinitrophenol for weight reduction. A few days prior to admission he had taken an undetermined amount of sulfathiazole for an acute upper respiratory infection. The course and termination was practically the same as the case under discussion.

Review of recent literature reveals only a few cases of fatal results due to agranulocytosis and malignant neutropenia, caused by sulfathiazole. Goldman and Appelbaum[1] reviewed the literature up to November, 1941, and found only thirty fatal cases due to sulfapyridine. The first fatal case of agranulocytosis due to sulfathiazole was reported by Kennedy and Finland.[2] Only two other fatal cases were found in the more recent literature. There have been about six reported cases of leukopenia in the literature which were not fatal.

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*From St. Vincent's Hospital.

*Permission to report this case was obtained from the attending physician, Dwight W. Gregg, M.D.

[1] Goldman, L. M., Applebaum, I. and Antopol, W.: Malignant Neutropenia Following Use of Sulfapyridine. Am. J. Clin. Path 11, Nov., 1941.

The literature on toxicity of sulfathiazole can be divided into the following groups: (1) experimental work and theories, (2) pathology, (3) clinical symptoms, (4) treatment of leukopenia due to sulfathiazole. Most of the experimental work has been done on Rhesus monkeys by Climenko and Wright.[3] Normal animals were used and were given doses of sulfathiazole ranging from 10 to 200 times the usual theraptuic doses. They found that animals given 5 Gm. per kilogram per day of sulfapyridine developed gross hematuria and died within a short time and most of the pathology was confined to the kidney. Animals given an equivalent amount of sulfathiazole showed no ill effects at the end of the experiment. However, when the dose level was raised, the difference between the two drugs disappeared and there was no difference in the pathology of the two different groups. In none of this experimental work was agranulocytosis noted.

Reinhold and Flippin[4] conducted a series of experiments with human beings. None of their cases were fatal and no cases of agranulocytosis were found. However, they also noted that transitory changes in renal function were present in nearly all cases but no cases of hematuria were reported.

Studies of the action of sulfathiazole in vitro on fibroblasts, macrophages and epithelia have been reported by Jacoby and Willmer.[5] Fibroblasts showed no essential changes at the end of the experiment. Macrophages, on the other hand, showed a marked series of morphologic changes. The cells became rounded, fat granules appeared and ameboid movement was largely suppressed. Removal of the drug resulted in a return to normal within twenty-four hours. Epithelial cultures showed no essential changes with sulfapyridine, sulfanilamide or sulfathiazole but a striking feature was noted with sulfadiazine. With this drug the epithelial cells grew rapidly and it seemed that the crystals formed a framework, upon which the cells grew more rapidly than in a normal culture medium.

Theories as to the reason why agranulocytosis and malignant neutropenia develop have been advanced by several authors.[6] One is that the sulfonamides depress the bone marrow and act mainly by arresting the maturation of the leukopathetic elements. Another is that there is a direct toxic action on the circulating leukocytes. A theory advanced by Kracke[7] is that of sensitization. In nearly all of the cases reviewed this seems to be the most plausible, since all of the fatal cases had received sulfonamides for a varying length of time without any pathologic changes in the blood picture until the drug had been stopped for a time and then given again. Several other authors have also noted other pathologic manifestations on resumption of interrupted medication, including skin eruptions, mild granulopenia after one dose, hemolytic anemia and microscopic hematuria. A few of these cases received the drug several months after the original medication but they exhibited the same signs and symptoms as those in whom the time interval was shorter.

The pathology of these cases in relation to the blood picture is essentially the same as that given in this case history. Most of these cases died before ulceration of the mucous membranes occurred and no other significant pathologic findings could be attributed to the drug. In all cases reported the bone marrow has been essentially the same and in contradistinction to the experimental pathologic findings there has been no serious renal damage found.

Clinical symptoms were also remarkably similar in that they all exhibited a high temperature on admittance, but under sulfathiazole therapy the temperature dropped to normal limits which remained stationary for a variable length of time. When the temperature began to rise after this quiescent period, the readministration of sulfathiazole seemed to aggravate the condition and most of the temperature curves became sawtoothed in character. Progressive weakness and death followed in a short time.

The most successful form of treatment thus far used has been the following: (1) daily blood counts for early detection of the leukopenia, (2) discontinuance of sulafthiazole at first sign of granulocytopenia or leukopenia unless this is definitely due to disease conditions such as typhoid, (3) pentnucleotide 10 cc. three or four times daily, (4) daily blood transfusions.

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[2] Kennedy, P. C., Finland, M.: Fatal Agranulocytosis from Sulfathiazole. J. A. M. A., 116:295-296. Jan. 25, 1941.

[3] Climenko, D. R. and Wright, A. W.: Effects of Continued Administration of Sulfathiazole and Sulfapyridine in Monkeys. Arch. Path., 32. Nov., 1941.

[4] Reinhold, J. G., Flippin, H. F. and Schwartz, L.: Observations on Pharmacology and Toxicology of Sulfathiazole in Man. Am. J. M. Sc., 199:393-401, March, 1940.

[5] Jacoby, F., Medawar, P. B. and Willmer, E. N.: Toxicity of Sulphonamide Drugs to Cells in Vitro. Brit. M. J., 2:149-153, Aug. 2, 1941.

[6] Dolgopol, V. B. and Hobart, H. M.: Granulocytopenia in Sulfapyridine Therapy. J. A. M. A., 113:1012-1017, Sept. 9, 1939.

[7] Kracke, R. R.: Relation of Drug Therapy to Neutropenic States. J. A. M. A., 111:1255-1259, Oct. 1, 1938.

SUMMARY AND CONCLUSIONS

1. A fatal case of agranulocytosis due to sulfathiazole is presented with a possibility that emperin may have been a contributing factor.

2. A review of the literature revealed only three other fatal cases reported, although there have probably been several more not reported.

3. Experimental work on human beings and monkeys has shown renal damage to be present when excessive doses were administered but no blood changes were noted.

4. Studies in vitro revealed that sulfathiazole has a definitely toxic effect on macrophages, causing definite changes in morphology and limitation of motion, but to a lesser extent than the other sulfonamides.

5. The most plausible theory advanced at the present seems that of sensitization to the drug. The length of time administered and blood concentration seem to have no bearing on the outcome, since doses of less than 5 Gm. have proved fatal. Interruption of administration seems to be the most important factor in the fatal cases.

6. The pathology of all cases was similar in that there was a complete absence of all forms of immature leukocytes in the bone marrow and disappearance of nearly all white blood cells from the peripheral circulation.

7. Clinical symptoms were nearly all those of an acute septic condition with a typical sawtooth temperature curve.

8. The most important feature in treatment of this condition seems to be that of prophylaxis, that is, daily blood counts with prompt discontinuance of the drug at the first signs of leukopenia.

Finally, the incidence of agranulocytosis due to sulfathiazole is very low in proportion to the number of patients receiving it. However, this condition must always be kept in mind and, although this drug is much less toxic than the other sulfonamides, it should be carefully guarded against by repeated blood counts.

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PSORIASIS VULGARIS

SOME THERAPEUTIC CONSIDERATIONS

Thomas S. Saunders, M.D.
PORTLAND, ORE.

That psoriasis is an incurable disease is universally conceded. However, the greatest disservice a physician can do a psoriatic patient is to advise him that nothing can be done about his condition. This is far from the truth of the situation and has the effect of forcing the patient to self-medication. To the physician who customarily deals with more serious illnesses psoriasis seems a trivial and inconsequential condition. The patient, however, regards the disease as distasteful and repulsive and usually insists on treatment of some sort. It is my purpose in this paper to record some impressions and experiences which may be of value to others in the practical management of this trying disease.

GENERAL CONSIDERATIONS

Psoriasis is by nature capricious. It tends to appear and disappear without rhyme or reason. We certainly must be circumspect regarding the efficiency of any or all therapeutic measures we employ. However, it is safe to assume that most of the patients seen by the dermatologist present lesions that are static or of long standing. Therefore, therapeutic appraisals tend to be more reliable than otherwise.

Psoriasis is said to be a disease of "healthy people," and such seems to be the case. Examinations of countless psoriatics have failed to reveal any direct connection with any other disease. Removal of foci of infection or correction of other diseases seems to have little or no effect on the course of psoriasis.

Age is of some, though minor consideration. When the disease begins in childhood (as it frequently does), it seems to be more refractory to treatment. When the patient reaches forty-five to fifty years, the disease tends to be stationary, and, if cleared, recurrences are less frequent.

More women than men seem to be affected, but in all probability women are more insistent in demanding treatment. Psoriasis can be, and often is, a serious cosmetic handicap. I can see no difference in response to treatment so far as sex is concerned. The disease occasionally disappears during pregnancy (to return promptly postpartum), and this has led to the use of pregnancy hormones without material benefit to date.

Body building seems to be an important consideration. I have the distinct impression (as have others) that the disease responds to treatment most readily in the slightly overweight or obese individual. A reduction in weight (aided by thyroid extract, if necessary) will often in itself produce gratifying results. Conversely, the disease in thin or asthenic persons seems to be very difficult to control.

Nervous and emotional influences seem to be a very minor issue. I can recall a few cases in which every serious emotional disturbance had been accompanied by an outbreak of the disease, but these may have been coincidental. Physical rest may be of some importance, because hospitalized patients almost always do better than ambulatory ones.

TYPES OF DISEASE

The clinical picture of the disease influences the prognosis and treatment to a great extent. The classification suggested by Wise and Sulzberger[1] seems eminently satisfactory (psoriasis vulgaris, psoriasis pustulosa, psoriasis arthopathica, and psoriasis mixta and, it may be added, their variants).

Almost all patients with psoriasis have the ordinary variety (psoriasis vulgaris). The picture is subject to great variations. Degrees of involvement from a few isolated plaques on the elbows and knees to production of a universal exfoliative dermatitis may be seen. The disease almost always starts as small punctate papules (psoriasis punctata) which usually increase in size to the production of the ordinary or discoid (nummular) lesions. However, should the discoid form fail to evolve, remaining punctate or guttate, I consider it very refractory to treatment. Erythroderma psoriaticum or psoriasis universalis usually responds to hospital management.

In general, psoriasis vulgaris responds satisfactorily to treatment, and this is particularly true of its variants (eczematized psoriasis, "seborrheic" psoriasis) excepting the hypertrophic types (psoriasis inveterata) which greatly resembles localized neurodermatitis. Pustular psoriasis and arthropathic psoriasis are usually resistant to any and all measures. In certain cases of the latter, it seems that a remission of the cutaneous signs is accompanied by an improvement of the arthritis.

REGIONAL TYPES

Psoriasis occurs characteristically on the scalp and it is in this location that the most brilliant therapeutic results are obtained. I have found the daily use of 12 per cent ammoniated mercury in a vanishing cream base to be almost uniformly successful.

The disease seldom occurs on the exposed surfaces (face and dorsa of hands) unless the attack is an unusually severe one. These lesions seem to respond just like those elsewhere.

Next to elbows and knees, the trunk is most commonly affected, and here the disease shows its most typical forms. I feel that, next to scalp lesions, trunk lesions are most responsive to therapy.

The gluteal cleft is the frequent site of thickened (and often nonscaly) lesions. Treatment often must be intensified to be of benefit in this region.

Lesions on the female external genitalia are uncommon, but the disease tends to occur on the male genitalia, the glans penis in particular. Caution must be exercised in prescribing strong applications for this region.

Psoriasis of the nails, present in about 20 per cent of cases, is very refractory to all measures, in my opinion. I have never been able to accomplish anything by treatment, which has included filtered roentgen rays.

SYSTEMIC MEASURES

I would place weight reduction in the obese and overweight as of prime consideration. For this purpose a low-fat diet is prescribed, but, in my opinion, does not produce benefit unless weight is actually substantially reduced.

Amenorrhea or oligomenorrhea seems to have been associated with attacks in a few cases personally observed. Correction of gynecologic abnormalities (therapeutic or spontaneous) seemed to benefit.

My experience with the use of vitamins (A, B complex, C, D and P) has been limited but generally unsatisfactory. The use of arsenic, highly touted though it is, has never been of any benefit in my cases. Intramuscular injections of the patient's own blood, regarded by most patients as ridiculous, may be of some value as an adjuvant to local therapy. A report in 1936 by Deneke[2] highly recommended sarsapirilla in large doses, along with low-fat diet, in the pruritic and inflammatory forms of the disease.

In general, systemic measures are not very satisfactory. Main reliance must be placed (in most cases) on local treatment.

LOCAL MEASURES

Chrysarobin, used in the treatment of psoriasis since 1878, remains the most effective single therapeutic measure. It is prescribed in 2-10 per cent concentration in ointment form for daily application. It occasionally produces an intense dermatitis on the surrounding skin and it possesses marked staining qualities which are very disagreeable. Indeed, some fastidious patients hate the chrysarobin as much as the disease, but they have to admit that "nothing works as well as chrysarobin." It should not be used on the scalp, face or hands for fear of causing a conjunctivitis. When chrysarobin is used in paints or varnishes, its value is materially reduced. A fairly good substitute (less staining, less irritating) is di-hydroxyanthranol as in the following prescription:

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[1] Wise, F. and Sulzberger, M. B.: Psoriasis and its Treatment. Year Book of Dermatology, p. 7, The Year Book Publishers, 1940.

[2] Quoted by Wise and Sulzberger: Vide supra, p. 44.

Salicylic acid	1
Ungt. Anthralin (0.5%) Abbott Lab.	6
Petrolatum qs ad	30

Ultraviolet light is a valuable measure in most but not all cases. Seasonal (winter) recurrences seem to respond favorably to its action. The exposure should always be strong enough to provoke a moderate erythema about the lesions. The action of the light is enhanced by preliminary removal of scales and application of tar salves or tar lotions. This (the so-called Goeckerman) treatment is eminently satisfactory in extensive cases and particularly so, if the patient can be hospitalized.

Ammoniated mercury in ointment form, with or without salicylic acid, is highly recommended by most authors. I have found it to be of benefit in only one location (the scalp) and in one variant (eczematized psoriasis). In the usual case its use in my hands has not produced any appreciable benefits.

Superficial roentgen therapy is a method popular with many dermatologists but the distribution of the disease, tending to be widespread, automatically restricts its use to cases showing a few inveterate plaques. To repeatedly irradiate such lesions over a period of years carries the hazard of producing a roentgen dermatitis which is worse than the original trouble. Also, some clinicians feel that psoriatic lesions which have been irridated are subsequently less amenable to other local measures. I do not feel this to be the case. Nevertheless, one must be quite cautious in using roentgen therapy in a disease such as psoriasis, with its remarkable tendency to recurrence.

SUMMARY

The pessimism with which psoriasis is invested is, in my experience, hardly justified. Many, if not most, cases can be relieved by simple and appropriate measures. Some experiences and impressions gained in the treatment of numerous cases over an eight-year period are presented with the aim of broadening the general practitioner's view of the problem.

Medical Arts Building.

INFECTIOUS MONONUCLEOSIS*

WITH ANEMIA, SKIN RASH AND JAUNDICE

THOMAS CARLILE, M.D.
and
JOHN M. BLACKFORD, M.D
SEATTLE, WASH.

Infectious mononucleosis is now recognized as occurring rather commonly in young individuals. Numerous articles have been written describing the typical course, blood picture, importance of the Paul-Bunnell heterophil agglutination test, and complications seen in isolated cases. Jaundice and skin rashes have been reported rather frequently, but a significant degree of anemia is rarely seen.

Minot,[1] in 1929, published a paper entitled "A Non-Fatal Case Simulating Acute Leukemia with Anemia and Thrombopenic Purpura."

An 18-year-old male, who had had fatigue for two months, developed dyspnea, palpitation and pallor. At the time he was seen, he had purpura, some fever and a weight loss of six pounds. Blood studies revealed hemoglobin of 55 per cent (Sahli), red blood cell count of 3,300,000, and 4 per cent reticulocytes. The platelets were 25,000 per cubic millimeter. The white blood count was 12,000, with 15 per cent polymorphonuclear neutrophils, 6 per cent small normal lymphocytes, 75 per cent pathologic lymphocytes and 4 typical monocytes. Two weeks later, the hemoglobin was 65 per cent (Sahli) and the red blood count was 3,800,000. The leukocyte count was 10,200, and the differential showed 35 per cent pathologic lymphocytes. The patient made a spontaneous recovery and was followed for eight years. At the end of that time, he was in normal health.

No definite diagnosis was made but infectious mononucleosis was suspected. This case was observed before the heterophil agglutination test was available. No other cases have been found in the literature of proved or suspected mononucleosis, in which there was a definite anemia.

Minot stated that "distinct anemia is at least very rare in infectious mononucleosis and its absence is usually considered of diagnostic importance." Potter[2] says that "anemia seldom, if ever, accompanies this condition." Romig[3] states that "severe anemia is never found." The following case is reported because of the degree of anemia that was present.

CASE REPORT

J. W., a 26-year-old law student was admitted to Virginia Mason Hospital on January 15, 1940. His chief complaints were sort throat, jaundice and fever.

The patient had been well until nineteen days before admission. At that time, while home during Christmas holidays, he developed general malaise and headaches.

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*From The Mason Clinic.

[1] Minot, G. R.: Non-Fatal Case Simulating Acute Leukemia with Anemia and Thrombopenic Purpura. M. Clin. North America, 13:1-9, July, 1929.

[2] Potter, H. W.: Analysis of Literature on Acute Mononucleosis, Virginia M. Monthly, 57:664-668, Jan., 1931.

[3] Romig, R. C.: Infectious Mononucleosis, Northwest Med., 29:588-593, Dec., 1930.

Three days later, he noted a sore neck. He then seemed to improve and returned to classes on January 2. During the next few days, he again developed general malaise, fatigue and anorexia. He reported to his physician who found his temperature elevated. He was admitted to the University Infirmary and was kept under observation. On at least one occasion, he had a chill and temperature of 104°. It was noted that his tonsils were enlarged and covered with exudate, but he stated that his throat was not sore at that time. On January 10, it was noted that he was jaundiced and for the first time his throat became sore. On January 13, a generalized papulomacular erythematous rash developed.

On January 14, blood studies revealed hemoglobin of 40 per cent, and the next day the patient was transferred to Virginia Mason Hospital for transfusion and diagnosis. Questioning disclosed that with the jaundice the stools were clay colored and the urine dark. For approximately ten days the patient had had blurred vision. On one day, he had had four or five nosebleeds of minor severity. Both hands were painful and the fingers were so tender that he could not wind his watch.

per cent eosinophils. Lymphocytes were reported as being leukocytoid, as in infectious mononucleosis. Reticulocyte count was 11.2 per cent. Urine specimens showed specific gravity of 1.005, acid reaction, ii for albumin (basis iii), 0 for sugar, very occasional granular casts, occasional red blood cells, and ii for pus (basis v). The Van den Bergh reaction was direct 5.35 mg. per cent. Kolmer and Kahn tests were negative. Heterophil agglutination test was reported as positive in a dilution of 1-2,048. Blood culture was negative.

Subsequent Course. The patient's temperature rose to 103.6° several hours after admission, and to 104° on the third hospital day. Subsequently, the temperature spiked twice daily for three days and then remained between 99° and 100° for four days. The pulse attained a maximum of 104 and gradually came down to 64. Three transfusions were given; one on January 15, one on January 17 and another on January 19. On the fourth hospital day, the jaundice was subsiding and the rash improving. Subjectively, the patient was greatly improved. On January 22, the spleen was palpable for the first time. The patient was sent home on January 24.

Date	Hemoglobin Per Cent	Millions of R.B.C.	W.B.C.	Percent of Lymphoyctes	Heterophil Agglutination
*1- 4-40			6,350	40 7 small 33 large	
1- 9-40			24,450	64 13 small 51 large	
1-11-40	58	2.62	12,600		
*1-13-40	46	1.93	12,000	72 22 small 50 large	
1-15-40	59 7.8 gm.	2.31	7,800	56	1:2048
1-19-40	81 11.2 gm.	3.95	9,800	79	
1-22-40	100 13.8 gm.	4.80	15,200	80	
2- 5-40	96 13.3 gm.	4.31	7,100	70	
2- 7-40			7,000	65	1:256
2- 9-40			9,900	51	
5-11-40	120 16.5 gm.	6.10	6,600	61	1:128
9- 7-40	108 14.8 gm.	5.60	6,850	42	Negative

Other Studies	
1-15-40	Van den Bergh 5.35 mg. direct reaction.
1-15-40	Blood culture negative.
1-16-40	Sedimentation rate corrected to 16 mm. in 1 hour.
1-16-40	Platelets—170,000.
1-16-40	Bleeding time: 2 min. Clotting time: 2 min., 32 sec.
1-16-40	Serology negative (Kolmer and Kahn).
1-23-40	Van den Bergh 1.8 mg. direct.
2- 7-40	Blood culture negative.

Jan. 16, 1940. Serum proteins 5.00 gm.; albumin 2.13 gm.; globulin 2.87 gm. A/G ratio 0.74.

Urine Analysis. From Jan. 15 to Jan. 23: i and ii for albumin (basis iii); 0 for sugar; occasional granular and leukocytic casts; i and ii for red blood cells (basis v); ii for pus (basis v). Jan. 16 urine was positive for bile.

TABLE 1. LABORATORY STUDIES.

*Laboratory studies 1-4-40 to 1-13-40 were made elsewhere before admission to Virginia Mason Hospital.

Physical Examination. Temperature on admission was 100.8° and five hours later was 103.8°. Pulse was 104 and respirations 22. Blood pressure was 95/50. The patient was acutely ill and moderately jaundiced. There was a papulomacular erythematous rash covering all of the body except the face. The sclerae were icteric. Eyes were otherwise normal. Nose and ears were normal. Tonsils were enlarged, cryptic and covered with a white exudate. The pharynx was injected. There were enlarged anterior and posterior cervical glands. Heart and lungs were normal. Examination of the abdomen was negative. Liver and spleen were not palpable. There was no abdominal tenderness. Rectum and genitalia were normal. Reflexes were physiologic. There was generalized enlargement of cervical, axillary, epitrochlear and inguinal lymph glands.

The laboratory work on admission was as follows: hemoglobin 59 per cent (7.8 grams), erythrocyte count 2,310,000, leukocyte count 7,800 with a differential count of 56 per cent lymphocytes, 43 per cent neutrophils, and 1

On February 3 the patient was readmitted with a bone felon which required surgical drainage. Except for weakness, he had almost entirely recovered from the previous illness. A number of small furuncles were present in addition to the bone felon. The fasting blood sugar was 95 mg. per cent on February 10. He was discharged on February 13 in good condition.

On May 11 the patient was seen again at our request. He had gained twenty-five pounds and was doing manual labor. He stated that when he took his employment examination, sugar was found in the urine. At that time, he said, he had a tremendous appetite. Repeated examinations of the urine were subsequently negative for sugar. At this time, the heterophil agglutination test was positive in a dilution of 1-128 and there was a leukocyte count of 6,600, with 61 per cent lymphocytes in the blood stream. These were still reported as leukocytoid in character. This was five months after the original hospital admission.

On September 7 the patient was feeling fine and about to return to the University. The heterophil agglutination test was negative and there was a leukocyte count of 6,850 per cubic millimeter with 42 per cent lymphocytes. These were reported as being normal in appearance. Laboratory studies are given in table 1.

On December 5, twenty-three months after the initial illness, inquiry disclosed that the patient had graduated from law school, had entered practice, and was being called to active duty in the Army. From this information, it is reasonable to assume that the patient showed no residual effects of his illness.

Discussion. The "typical case" of infectious mononucleosis is relatively benign in character. It is not unusual for the temperature to rise to 103° or even 104° in the more severe cases, but this is the exception rather than the rule. Rashes have been noted rather frequently and reported by Templeton and Sutherland[4] and Tidy, among others. In Templeton and Sutherland's series of 91 cases among university students, 18.5 per cent (17 cases) had skin rashes. Lyght, quoted by the above authors, found five students with a rash in 100 cases of infectious mononucleosis.

Mason[5] reported two cases of infectious mononucleosis with jaundice. He stated that jaundice was first reported by Mackey and Wakefield.[6] In 1940, Chapman and Chapman[7] reported seven cases of jaundice seen over a relatively short time, in which a diagnosis of infectious mononucleosis was made from blood smears. They stated that there were a number of other cases of jaundice seen in that community at the same time, in which blood studies were not made. It has been suggested by several authors that some of the cases of catarrhal jaundice are actually infectious mononucleosis. In our case, the direct Van den Bergh reaction, the presence of bile in the urine, and the history of clay-colored stools and dark urine, suggest that the jaundice was obstructive in type.

As has been noted above, anemia is very rare in infectious mononucleosis and makes the differentiation from lymphatic leukemia even more difficult. The presence of typical infectious mononucleosis cells, the markedly positive heterophile agglutination test, the brief course of the acute illness, and the complete recovery with the patient in good health two years after the illness differentiate conclusively between the two conditions.

CONCLUSIONS

A case of infectious mononucleosis is reported with two common complications, skin rash and jaundice, and with the rare complication of anemia. With blood smears and heterophil agglutination tests, it is possible to differentiate this condition from leukemia. The subsequent course to date confirms the diagnosis.

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[4] Templeton, H. J. and Sutherland, R. T.: Exanthem of Acute Mononucleosis, J.A.M.A., 113:1215-1216, Sept. 23, 1939.

[5] Mason, V. R.: Jaundice in Acute Infectious Mononucleosis, California and West. Med., 29:187-188, Sept., 1928.

[6] Mackey, R. D. and Wakefield, E. G.: Occurrence of Abnormal Leucocytes in Blood of Patient with Jaundice (Infectious Mononucleosis-Glandular Fever), Ann. Clin. Med., 4:727-729, March, 1926.

[7] Chapman, A. A. and Chapman, J.: Infectious Mononucleosis with Jaundice, Southwestern Med., 24:200, June, 1940.

CLINICAL FORUM

OBSTETRIC PROBLEM

This woman had a normal pregnancy except for severe nausea and vomiting in 1929. In 1934 she passed through another normal gestation period, except for the third stage, when the placenta was retained two and one-half hours. In 1937, she again conceived twins. On December 25, some bleeding appeared and on January 11, 1938, she spontaneously went into labor when only twenty-eight weeks pregnant and delivered twins weighing 2 lbs. 7 oz. and 2 lbs. 8 oz. respectively, both expiring within a few hours.

In 1942 she became pregnant again and almost from the first presented considerable spotting and discharge, accompanied by cramps and backache. She was in bed the first part of her pregnancy due to nausea and vomiting. During the remaining period she was still confined to bed because of the pains and spotting. She was given progesterone a number of times when having cramps or show. On February 27, when thirty-one weeks pregnant, she had bright bleeding. She was hospitalized at once.

Examination revealed that the cervix was two and one-half cm. dilated, head high, lateral (partial) placenta previa. Due to loss of the twins at twenty-eight weeks, she was very anxious to assume risks in an endeavor to carry gestation a little further by staying in the hospital. During the next forty-two hours, she had very slight bleeding and occasional distress. Then labor set in definitely with hard pains every fixe to six minutes. After one hour of these, the patient was examined and her cervix found to be four cm. dilated.

The membranes were ruptured artificially. There was no bleeding. After the pains had continued forty minutes without bleeding, she had a sudden large hemorrhage, estimated to be about five hundred cc. She was placed on the table and hand inserted into the vagina at once to control bleeding. The cervix was found to be more than half dilated, but all that could be discerned was a mass of placenta. An attempt was made to get around it but without success. The patient to this point had not been anesthetized. Therefore, due to the severe bleeding, the fist of the examining hand was rammed into the mass, and with pressure on the fundus above, bleeding was controlled until anesthesia was complete. With the bleeding controlled and the patient asleep, a contraction ring was discovered which had pushed about twenty-five per cent of the placenta into the vagina ahead of the ring. The opening in this contracture was about two and one-half cm. in diameter.

To the time the patient was put on the table the fetal heart tones were normal. What would you suggest as the procedure from this point on?

COMMENTS ON PEDIATRIC PROBLEM IN MARCH ISSUE

First commentator states: There are three outstanding facts relative to this case: first, the history suggests that there is a familial strain present; second, the child is suffering from marked anemia of unusual degree; third, the little patient is prostrated by an acute pulmonary infection, serious under any circumstances but much more desperate under the existing situation.

It would be interesting to learn whether any of the members of the family prior to the child's mother also presented an anemia with splenic enlargement. Another interesting sidelight would be the examination and reporting of the four and a half year old girl who seems to have some type of anemia.

To attempt to treat a child with so marked an anemia as this, complicated by pneumonia, forces upon one a problem which is exceedingly hard to cope with. One naturally turns to the sulfonamides at once by way of treatment of the bronchial conditions, since it is the acute and immediate problem, with the hope that this infection is not really a terminal event. If that treatment succeeds, one would anticipate taking some definite steps toward alleviating and remedying the familial anemia.

Authorities in commenting on these cases are not very encouraging in their results with transfusions for a cure. The preexisting anemia returns. Some have suggested that deep roentgen therapy of the spleen in divided doses of sufficient power to gradually destroy splenic tissue will bring about a cure. This, however, is a slow procedure. Therefore, one would conclude that the removal of the spleen would be in order, then to give transfusions and by emphasizing diet bring the child to normal.

Second commentator believes: The diagnosis may be considered as follows: A ten month infant with such severe anemia and an enlarged spleen immediately fits a large group of anemias, classed roughly as anemia with splenomegaly. This group includes a number of conditions. The more common are Banti's disease, Gaucher's disease, leukemia, Hodgkin's disease, lymphosarcoma, hemolytic jaundice, both familial and acquired, von Jaksch's anemia and Cooly's or erythroblastic anemia.

This child's fundamental underlying difficulty is apparent from (1) the history of the mother's pallor and enlarged spleen, (2) the marked fragility of the patient's red cells on two occasions. The first of these is strongly suggestive of familial hemolytic icterus, and the second is conclusive evidence of hemolytic icterus. Increased fragility of the red cells is pathognomonic of acholuric jaundice.

Several things are not in keeping with the usual case of this disease. Jaundice is not mentioned, but may have been slight or absent, as is sometimes the case. The degree of anemia present is not compatible with the usual case, and is present here probably because this child seems to have both familial hemolytic icterus and von Jaksch's anemia (due to repeated infection). Further corroboration of this supposition is found in the unusual degree of leukocytosis present, and the fact of the omission of vitamins A and D from the diet (no cod liver oil, eggs or meat). The two infections, considered bronchopneumonia, would further dispose to von Jaksch's type of anemia.

This child's treatment is splenectomy, but this should not be performed until the general condition is greatly improved. These cases are not helped by transfusions, and are frequently made worse. We must depend on a good diet, including vitamins A and D, augmented with iron and liver, and protection from contact infection to prepare such a case for splenectomy. The prognosis is bad, but eventual relief is not impossible.

Third commentator thinks: The diagnosis which must be entertained is that of familial hemolytic icterus. This could be further corroborated by finding a high percentage of reticulitis, an elevated icterus index and a large amount of urobilinogen in the urine. The baby should be repeatedly transfused until the hemoglobin is raised to a safe level, about 65 per cent or more. Then he should have the spleen removed. This will probably aid greatly, although one must not give a definitely good prognosis in the case of a child having symptoms at such an early age.

Fourth commentator adds: From the history of this patient there are several outstanding findings that practically make the diagnosis: (1) familial history of anemia in mother and sibling, (2) enlarged spleen in mother; enlarged spleen in patient, (3) severe anemia, (4) red blood cells fragile in all dilution by fragility tests. This commentator would be very interested in the icteric index and the presence of urobilinuria. This and two tests are very pertinent in the final diagnosis.

Conclusion of Case: The diagnosis was hemolytic familial icterus with bronchopneumonia. The latter condition cleared up promptly under treatment. The spleen was removed, the gland weighing 1437 grams. During the ten months which followed this operation, the child has done well, and a recent blood count showed it to be relatively normal.

MEDICAL COORDINATION DEMONSTRATED IN HUNAN

In spite of adverse war conditions, with an enemy of invasion at the very doors, province-wide cooperation of mission hospitals is well under way in Hunan. Around the Hsiangya Hospital, whose cornerstone was laid by Professor William H. Welch on October 18, 1915, the several hospitals of Hunan have agreed to work as a friendly team. The missions concerned are the Presbyterian (U.S.A.), Evangelical (U.S.A.), Evangelical and Reformed (U.S.A.), Liebenzeller, British Methodist, Norwegian Lutheran, Finnish Lutheran, and Roman Catholic. It is heartening to find, in the medical field, an area of work in which Roman Catholics and Protestants can integrate their activities. At the All-India Conference of India Christians held in Lucknow a year ago, it was argued "that there should be cooperation between Roman Catholics and Protestants in all matters concerned with the social and political advancement of the community as a whole."

There are 22 hospitals in this truly international group, which will be known as the Hsiangya Medical Centre. Its purpose is

a) to strengthen the bond between all Christian medical forces in Hunan province.
b) to provide integration with the National Hsiangya Medical College (temporarily refugeeing in Kweiyang, capital of Kweichow Province) and the Hunan Provincial Health Administration.
c) to demonstrate the possibility of integrating all the medical forces in the Province of Hunan into a single medical enterprise.

Bulletin of Christian Medical Council of Overseas Work, New York, Feb., 1942.

TREATMENT OF TYPHOID CARRIERS

Treatment of typhoid carriers with the drug, soluble iodophthalein, should be given consideration before surgical removal of the gallbladder (cholecystectomy) is resorted to, particularly in bile carriers past 50 years of age and in the presence of a well functioning gallbladder, William Saphir, M.D., Chicago; Walter H. Baer, M.D., and Frederic Plotke, M.D., Manteno, Ill, advise in *The Journal of the American Medical Association* for March 21 in a report on a study of 110 such carriers at Manteno State Hospital. They also advise treatment with the drug of any questionable fecal carriers in view of the difficulties in definitely ruling out the bile carrier state. Drug treatment of 65 bile carriers resulted in sterilization of the bile in 32.3 per cent and freed the stools from typhoid bacilli in 7.6 per cent.

POSTGRADUATE LECTURES

Postgraduate courses of lectures are scheduled each year for the profession in our three states. It has been customary to list them in this journal under ehadings and dates as they occur from month to month. In this issue notice is given of those which have been received for publication.

OREGON

General Postgraduate Session
Portland Academy of Medicine
April 13-15

American College of Surgeons Sectional Meeting
Portland, April 27-30

Pacific Coast Oto-Ophthalmological Society
President, Ralph A. Fenton, Portland
Secretary, C. Allen Dickey, San Francisco
Portland, May 11-14

Pacific Northwest Medical Association
Hotel Multnomah, Portland, June 17-20

GUEST SPEAKERS

Fundamental Sciences
Anton J. Carlson, Ph.D., Hon. M.D.,
Professor of Physiology, University of Chicago
Jerome W. Conn, M.D.,
Associate Professor of Internal Medicine,
University of Michigan Medical School

Medicine
Arlie R. Barnes, M.D.,
Professor of Medicine,
University of Minnesota Graduate School
Elmer L. Sevringhaus, M.D.,
Professor of Medicine,
University of Wisconsin Medical School

Surgery
Warfield M. Firor, M.D.,
Associate Professor of Surgery,
Johns Hopkins University School of Medicine

Obstetrics
Frederick C. Irving, M.D.,
William Lambert Richard, Professor of Obstetrics,
Harvard Medical School

Radiology
Frederic E. Templeton,
Assistant Professor of Roentgenology,
University of Chicago School of Medicine

Military Medicine
P. W. Gibson, M.D.,
Colonel, U. S. Army Medical Corps,
Commanding Officer Barnes General Hospital,
Vancouver, Washington
D. W. Wheeler, M.D.,
Lieutenant Commander, U. S. Navy Medical Corps,
Chief of the Medical Service, U. S. Naval Hospital,
Puget Sound Navy Yard, Bremerton, Washington
L. R. Gowan, M.D.,
Lieutenant Commander, U. S. Navy Medical Corps,
Head of the Department of Neurology and Psychiatry,
U. S. Naval Hospital, Puget Sound Navy Yard,
Bremerton, Washington

Banquet Speaker
Brigadier General Lewis B. Hershey,
Director of the Selective Service System, Washington, D. C.
(Additional speakers are expected)

Other courses of lectures not specified heerin are solicited for the purpose of featuring them from month to month. More detailed information will be included for each one if the data are received for that purpose. Fhis form of publicity will depend upon the attention of those sufficiently interested to forward the information.

WASHINGTON

Tacoma Surgical Club
April 11

The annual meeting of Tacoma Surgical Club will present anatomical and surgical demonstration; symposia on fractures, shock, management of gas casualties.

Guest Speaker: Leo Eloesser, M.D.,
Professor of Surgery, Stanford University
Lectures: *"Fractures in War Time*
"Trauma to Lung and Chest"

Spokane Surgical Society
April 25

Annual meeting of Spokane Surgical Society will be held at Davenport Hotel.

Guest Speaker: Richard B. Cattell, M.D.,
From the Lahey Clinic
Lectures: *"Diseases of Thyroid Gland"*
"Common Dust Obstructions"
"Operation for Carcinoma of Colon and Rectum"

IDAHO

The fiftieth annual meeting of Idaho State Medical Association will be held at Sun Valley September 16-19. The program for this meeting will consist of postgraduate lectures. The lecturers will come from the faculty of University of Oregon Medical School.

SWING HIGH, SWING LOW

Two figures have been recently released by the United States Bureau of Census, which make good reading for all of us interested in the coming of babies. In 1941, there were more babies born than in any other year of our history, except one. And in 1940 the maternal mortality rate was the lowest in history, barring none—37.6 for every 10,000 live babies born.

The National birth rate in 1941 was 18.8 as compared to 17.9 in 1940. The Census Bureau noted that the German birth rate stood at 20 in 1940, and has been declining since then. Population experts, however, are still fighting it out among themselves as to whether this increase in the birth rate is a reversal in trend.

While the low maternal mortality rate is a sign that motherhood is safer in the United States, nevertheless, the Census Bureau points out that the 1940 maternal mortality rate for negro women was nearly 2½ times as high as that for white women. The reduction in the maternal mortality rate for 1939 to 1940 was accounted for entirely by the reduction in the rate for white women from 35 per 10,000 live births to 32.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING
CORVALLIS, SEPT. 9-12, 1942

U. OF O. MEDICAL SCHOOL

GENERAL RESERVE HOSPITAL

One of Portland's major efforts in the medical line is taking shape with completion of organization of a general reserve hospital, affiliated unit of the University of Oregon medical school. The officer personnel comprises fifty-five doctors, seven dentists, six administrative, two quartermasters, two chaplains, one sanitary engineer, totaling seventy-three persons. Ratings include one colonel, three lieutenant colonels, twenty-two majors, twenty-eight captains, fifteen first lieutenants and four second lieutenants.

In addition to the officer personnel there are 120 nurses and 500 enlisted men. Some nurses have been enlisted in the reserve corps and assigned to the unit. In similar manner some of the specialists in the enlisted reserve have been assigned to the unit. The remainder will be procured whenever mobilization occurs.

The affiliated unit of the University of Oregon served in World War I and was then known as Base Hospital 46. It was stationed at Bazoilles, France. However, none of the officer, nurse or enlisted personnel of the old unit is assigned to the new organization.

Unit diretcor is Colonel J. Guy Strohm, medical reserve. Chief of surgical service is Lieutenant Colonel Eugene Rockey, medical reserve; chief of medical service is Lieutenant Colonel Frank R. Mount, medical reserve. Chief of dental services is Major Frank V. Lutz, dental reserve. Chief of radiology service is Captain James B. Haworth, medical reserve.

In this affiliated unit it is necessary that all officer personnel be from the faculty of the University of Oregon medical school. Details of time, place, destinations, etc. are regarded as information of interest to the enemy and publication is not permitted.

For the past two years officer personnel of the medical school has been on weekly training schedule which will prove of great assistance when time of activation of the unit arrives.

The faculty of the medical school has contributed greatly to the armed forces of the nation. In addition to the seventy-three officers who will be called out with the hospital unit, thirty-five faculty members already are in the nation's armed forces.

ALUMNI ASSOCIATION REFRESHER COURSE

War has put no crimp in postgraduate sessions. This was proved to the University of Oregon medical school alumni association when it played host to its 30th annual "refresher" session March 23-27.

The committee in charge frankly was pessimistic about attendance when it announced its program. War uncertainties and the fact that many doctors are working chock-full schedules these days was interpreted by the school as a sure sign the enrollment would go down from the 150 of last year. But early registrations deluged the school and attendance was topnotch as ever.

The conference this year stressed clinical work, cutting down on lecture periods. The Ernest A. Sommer lecture series proved popular. Giving the papers this year were Dr. Harvey B. Stone, surgeon at Johns Hopkins, and Dr. George W. Holmes, radiologist at Massachusetts General Hospital, Boston.

Arranging the summer lecture series were Thomas M. Joyce, Frank R. Menne and Frank R. Mount, all of Portland, and Otis F. Lamson, Seattle. Making arrangements for the session were David W. E. Baird, Richard B. Adams, Carl Ashley, Howard P. Lewis, John A. Gius, Paul V. Woolley, Howard C. Stearns, Canfield Beattie, Ralph A. Fenton and Ralph Couch, administrator of hospitals in the University medical center.

POHL MEMORIAL FELLOWSHIP

Dr. Esther Pohl Lovejoy has completed her contributions toward the $5,000 Pohl memorial fellowship. Income of the fund is awarded to a student of promise in the field of medicine. The fellowship was endowed in 1936 by Dr. Lovejoy, who graduated from the Oregon medical school in 1894, in memory of her husband, Dr. Emil Pohl, and her son, Frederick Clayson Pohl.

MEDICAL MEETINGS AHEAD

Let's go to a medical meeting! Look at the Bulletin Board in this issue before the State Sections and see what is available. Pick one. Pick two, or pick them all. The possibilities are many and the topics are of assured value and interest.

Certainly we are busy, but not as busy as we are going to be. Certainly we are tired and at times fed up with medicine, but these opportunities are refreshing and invigorating in a way which can only be understood by a physician.

Go to listen and learn something new. Go also to see your friends and find out that they, too, are busy. Discussion with them of mutual problems and interests will take you out of your rut faster than you can imagine and you can return to your work with renewed vigor, bringing something new to your practices.

Let's go to a meeting—or two.

STATE DEPARTMENT OF HEALTH

A new district health unit set-up has been established in Benton and Polk counties. This has been especially necessitated by the establishment of a cantonment in this area. Funds will be derived from the counties, the state and federal health agencies, and the local medical societies of the two counties are sponsoring the establishment of the unit.

Herbert Notkin will be the health officer in charge of the district unit and will have five nurses, a sanitarian and two clerks on his staff. Headquarters of the district will be in Corvallis. Headquarters in Polk County will be in Dallas. A. B. Starbuck of Dallas will continue as acting health officer in Polk County.

E. E. Berg, Clatsop County Health Officer, Astoria, was called to active military servive as Lieutenant in the U. S. Army.

An intensive effort is being made to have every child over nine months of age in the state of Oregon protected against smallpox and diphtheria by May 1, 1942.

MEDICAL NOTES

Irvine R. Fox of Eugene and J. L. Ingle of La Grande have been reappointed as members of the State Board of Medical Examiners by Governor Charles A. Sprague.

Vernon A. Douglas, Marion County Health Officer, was appointed state medical officer for the Oregon defense council by Governor Sprague. His duty will consist of coordinating the work of the various county medical disaster relief units as set up by local defense councils.

Changes in Location: A. L. Victor from Salem to Yoncalla; A. J. McCannell from Silverton to Chiloquin.

Newly Located: T. H. Dunham in Salem; Robert T. Boals in Portland; E. J. Semansky in La Grande.

WOMAN'S AUXILIARY

The first quarterly Board Meeting of the new year of the Woman's Auxiliary to Oregon State Medical Society was held in Portland on February 24. State president, Mrs. Charles E. Hunt of Eugene, presided. There was a good representation from over the state and all committee chairmen were there to give reports on their departmental activities. At this time Mrs. Hunt read her report of the National Board meeting which was held in Chicago.

Benton County Auxiliary members are very active as individuals in the various organizations of their county. One of our members is conducting a class in Red Cross home nursing; another is youth chairman for the Woman's Club and Child Welfare chairman for the American Legion auxiliary; one is Seal Sale chairman for the Benton County Public Health Association; another is an officer and on the local Camp Fire Girls' Council. One has recently been elected president of Oregon State Mothers' Club. As a group we are planning training in Red Cross canteen service. We have put twenty-three *Hygeia* subscriptions into the schools of the county.

Clatsop County Auxiliary does sewing for Doernbecker Hospital as its chief project. They have recently completed five dozen pneumonia jackets. *Hygeia* has been kept in all the school libraries throughout the county.

Jackson County. Mrs. Hunt, state president of the Auxiliary to the Medical Society met with the Jackson County group in December for their annual Christmas party. This group has been meeting only once each year. However, following the president's talk they became interested in planning a program for the year and decided to meet more often.

The program includes a course in First Aid. For this course the group will meet one evening each week. Members of the County Medical Society will act as instructors. When this is completed the study of Nutrition will be begun and meeting nights will be scheduled for once each month.

As a project they are selling tickets on a beautiful quilt which was donated by one of the members. Fifty dollars from this sale will go to the Red Cross.

Marion-Polk County Auxiliary meets the second Thursday of each month with a dinner meeting held in the homes of members. Average attendance was about twenty-five. Programs provided each time by the committee in charge. Recently they have centered on national defense nutrition and the work of the Public Health Department. Speaker for the February meeting was Mrs. Skinner of the Public Health staff. She told of the problems of the department and of the need of layettes for prospective mothers who cannot afford to buy the things they need. The auxiliary voted to provide the necessary material and work on the garments during the meetings.

Multnomah County Auxiliary recently held an interesting meeting under the direction of our Public Relations chairman, Mrs. Eugene Owen. The committee entertained seventy-five representatives of women's clubs in addition to our own members at a salad luncheon and presented a program of defense education.

Members of Multnomah Auxiliary assisted the Public Health department of the medical school by serving at the registration desk and as ushers at the Oregon Social Hygiene Conference held at the Multnomah Hotel February 21. We cooperated with the Federation of Women's Clubs in urging passage of bills sponsored by the medical society. We have had a representative on the Women's Legislative Council.

SOCIETY MEETINGS

CENTRAL WILLAMETTE MEDICAL SOCIETY

Central Willamette Medical Society was addressed by Roger H. Keane of Portland on March 5, The title of the paper was "Prognostic and Diagnostic Value of Eye-ground Examinations in Hypertension."

JACKSON COUNTY MEDICAL SOCIETY

Walter Kresse spoke before Jackson County Medical Society on Feb. 25 on the subject of "History of Cat Gut."

LINN COUNTY MEDICAL SOCIETY

The regular meeting of Linn County Medical Society held on March 12 was devoted to the discussion of "Medical Preparedness in Civilian Defense."

MULTNOMAH COUNTY MEDICAL SOCIETY

Medical and hospital aspects of civilian defense were outlined by Adolph Weinzirl and Mr. Ralf Couch at the March meeting of Multnomah County Medical Society. Captain Jack Lowe of the Portland fire department spoke and showed moving pictures on incendiary bomb control.

YAMHILL COUNTY MEDICAL SOCIETY

Yamhill County Medical Society, at its monthly meeting on March 3, was addressed by E. W. Rockey and John Raaf of Portland on "The Treatment of Head Injuries."

MORE ABOUT INITIATIVE NO. 151

In the March issue of *Northwest Medicine* a preliminary review was published on Section 15 of Initiative 151, a section similar to that of the present law known as Initiative 141, calling for an all-out medical care program for old age pensioners and others who come under the supervision of the Social Security Department. N. P. Atkinson, state Senator from the Thirty-second Legislative District, King County, and President of the Washington Old Age Pension Union, in a letter dated March 18, takes exception to statements made in the article. We present parts of Mr. Atkinson's letter and a reply from the writer of the original article:

> "In the interests of fair play and scientific accuracy I am sure you will want to publish a short reply to the article . . .
>
> "The public health service provided for public assistance recipients under Initiatives 141 and 151 are a far cry from the 'socialized medicine' your writer claims them to be. The first essence of socialism is the invasion of private ownership or practice. * * * * * * *
>
> "Your writer makes a great deal of 'supplemental diets' and necessary health care which, he says, 'would indicate that a "doctor" could write prescriptions for everything on the grocery shelf, not only for old age pensioners but for their dependents as well.' The answer to this is that the state would not permit any such abuses, even if there was a doctor who would go that far. So far as dependents receiving any grants or medical care, they have to be sharing the pensioner's check in combined living before they are eligible under 151 for anything.
>
> "No one knows what 151 will cost, says your writer; it may run into 150 or 200 millions of dollars. * * * * * It shows that Initiative 151 calls for only a small percentage of increase over the 75 million dollars appropriated for social security from federal and state funds this biennium. Such increases as do occur would require but a MINOR portion of the SURPLUS sales and business taxes NOW ACCUMULATING in our state treasury.
>
> "Any state expenditure must be measured by the good results it brings in the health and energy of the people to contribute their share to the civilian defense and to the winning of the war. Judged from this viewpoint, 151 is a DEFENSE NECESSITY." N. P. Atkinson, Pres.
>
> (Note: The Capitals are Atkinson's.)

Mr. Atkinson's phrase "scientific accuracy" cannot be applied to Initiative 141 nor, for that matter, to Mr. Atkinson himself, one of the sponsors of the original Initiative, when we learn that the Attorney General's office at Olympia has approximately 700 lawsuits on hand against 141 which call for further clarification of present law. Several of these suits were filed against Section 15 of the law which applied only to old age pensioners. The proposed new law (151) would service every person, regardless of age, who receives assistance by or under the Social Security Department.

In his letter for "fair play" Mr. Atkinson declares that the state would not permit any abuses under item 5 which calls for "special or supplemental diets as prescribed by applicant's doctor." It may be true that the state would not permit such abuses, if it has anything to say about it. The rules have been challenged in 141 in the courts of law through the interpretations of the word "doctor" and their privileges to treat old age pensioners under their respective practice acts.

"Special and supplemental diets" are broad terms. What is a "supplemental diet?" We doubt if the legal minds of the Attorney General's office or the sponsors of the measure can define it.

Mr. Atkinson fails to refer to Item 6 of Section 15 which says: "Such additional care and services as may be necessary to maintain or restore applicant's physical and mental health." What does Item 6 mean? Vacations at the beach, boat trips, special back rubs? What is the definition of "mental health"? Item 6 does not specify that a "doctor" shall administer. Who is to interpret Item 6?

Mr. Atkinson mentions seventy-five million dollars under the Social Security Act and then says that the provisions of 151 "call for only a small percentage of increase," basing his arguments on the functions of 141. He believes that the extra costs of 151 would be financed by the surplus sales and business taxes accumulating in the state treasury and the thirty million dollars in the treasury. Yet, we are informed through a statement issued by the State Finance Committee and the State Treasurer (*Seattle Times,* March 22, 1942) that such funds are definitely earmarked for various state functions. We repeat that no one knows what 151 will cost, if passed. Our guess is as good as Mr. Atkinson's.

DEPARTMENT OF HEALTH

PHYSICIAN'S RESPONSIBILITY IN SEROLOGY

The Committee on Public Health and Sanitation of Washington State Medical Association feels that, under ordinary circumstances of availability of private laboratory service, the State Department of Health laboratory should not be burdened with performance of serologic tests for patients of physicians who can or do pay for such tests. This, of course, is exclusive of tests submitted to the department for the purpose of check. The committee further believes that the physician's cooperation in this matter should not cause any reduction in the number of needed tests being performed.

In this connection the attention of the physician is directed to the resolution passed by the House of Delegates of Washington State Medical Association in 1941 (See Northwest Medicine, Vol. 40, No. 10, page 384). That resolution pertains to serologic examinations.

Letters on this matter were mailed to each county medical society by the secretary and treasurer of Washington State Medical Association under the date of January 17. The State Department of Health is cooperating with the Association in this matter by attaching a supplementary slip to each serologic tube mailed to private physicians.

It is the responsibility of the physician membership of the Association to be familiar with the resolution and with the joint endeavors of the Association and health department. It is the responsibility of the physician to let medical ethics guide him in his action in this matter.

MEDICAL NOTES

Defense Items: Communities throughout the state are making preparation for care of casualty cases in event of bombing raids. At Gig Harbor several ambulance units have been established; a casualty station, an emergency hospital and a base hospital have all been arranged for. At Anacortes special equipment and supplies have been ordered for a base hospital which has been set up. The north end district of Tacoma held a practice air raid recently which brought to light the fact that no medical supplies were available. Citizens were asked to contribute. In Snohomish County fifty members of the medical aid unit have been assigned to posts. Central headquarters of the unit will be at Snohomish General Hospital. First aid and casualty stations have also been set up. In Grays Harbor County outlying districts are receiving attention and means are being provided for furnishing medical aid to the rural districts in case of attack. In Spokane more than a thousand people are attached to the medical unit which is well organized. Three base hospitals have been designated and complete staffs are named. In addition, a portable unit has been set up and its equipment and supplies are in storage ready for immediate use. In Seattle many graduate nurses are giving courses in home nursing and more than ten thousand are taking Red Cross first aid instruction. Facilities are being arranged for storage of frozen plasma and volunteer donors are expected to contribute more than 5,000 units.

Seattle Hospitals Sign with Union. Seattle hospitals have agreed to meet the demands of building service union. This will involve a raise of wages to the hotel scale and will eliminate compulsory acceptance of board and room, previously demanded by the hospitals. Average monthly increase in the case of janitors is about $22, while women employees will be raised $31.50.

Hospital Addition. A two-story addition to the Bronson Memorial Hospital at Renton is to be built. It is expected that a thirty-three bed annex will cost forty to sixty thousand dollars.

Goldendale Hospital. A residence property at Goldendale will be converted into a hospital, to be known as the Goldendale General Hospital.

Will Provide Hospital Funds. The late Mr. P. P. Lee has willed $20,000 toward construction of a hospital, if three or more of Bellingham's churches should unite in a building program.

Navy Sponsors Lectures. A group of Navy surgeons, composed of Comdr. W. McK. Craig, Comdr. A. M. Snell, Lt. Comdr. H. K. Gray, Lt. E. N. Cook and Lt. H. B. Macy gave a series of lectures at Bremerton from February 26 to March 5.

Tuberculosis Conference. Conference on tuberculosis was held at the College Club, Seattle, March 16 and 17, with Harold Trimble of Oakland, California, as guest speaker.

Sprowl on Examining Board. Frederick G. Sprowl of Spokane has been appointed a member of the state medical examining board, to succeed Donald G. Corbett.

Locations: Donald Anderson, who has been in Nome for the past year, has moved to Yakima, where he will be associated with D. F. Bice. Wesley V. Frick of Dayton has taken over the office of E. J. Lewis at Waitsburg. Dr. Lewis has entered military service. Benjamin Crosby, who has been at Dayton, is moving to Burbank, California. Stanley Holton has closed his office in Mt. Vernon.

Weddings: J. Hans Lehmann of Seattle and Miss Thelma Gerstman were married February 15.

Frank E. Parsley and Miss Jeannette Du Bois of Seattle were married February 21.

J. L. Ash of Seattle and Senorita Elba Celeste Pellerano of Santa Domingo, Dominican Republic, were married in San Francisco February 17.

OBITUARY

Dr. Leslie Bryce Stockslager of Clarkston died suddenly February 17, aged 57, of coronary thrombosis. He was born in Galena, Kansas, September 6, 1884, and when two years old was brought to Hailey, Idaho, with his parents. He attended Lewiston Normal and the University of Idaho and studied medicine at Barnes Medical College, St. Louis, Missouri, where he received his degree in 1908. He practiced in Twin Falls, Wallace and Lewiston, Idaho, and for the past twelve years has lived at Clarkston.

SPOKANE SURGICAL SOCIETY

The annual meeting of Spokane Surgical Society will be held at Davenport Hotel, April 25.

PROGRAM

Diagnostic Clinic, 9:30 a.m.

1. Cardiospasm. R. E. Ahlquist.
2. Bowel Obstruction in the New Born. E. S. Jennings.
3. Abdominal Ascites; Undetermined Etiology. H. E. Wheeler.
4. Carcinoma of Substernal Thyroid. J. W. Lynch.

Noon: Round Table Discussion. Diseases of the Thyroid Gland. Richard B. Cattell.

Afternoon Session

2:00. Metastatic Carcinoma of Cervical Lymph Glands Without Demonstrable Primary Growth. E. M. Welty.
2:15. Neurofibroma of Gastrocolic Omentum. J. M. Nelson.
2:30. Persistent Vitelline Duct. R. L. Rotchford.
2:45. Abdominal Pregnancy. R. D. Reekie.
3:00. Bowel Resection. Charles Mowery.
3:15—Meningioma Producing Chronic Sciatica. W. E. Grieve.
3:30. Bowel Resection, First Stage Procedure. R. G. Andres.
3:45. Adamantinoma of the Jaw. A. O. Adams.
4:00. Common Duct Obstruction. Richard B. Cattell.

Banquet: Selection of Operation for Carcinoma of the Colon and Rectum. Richard B. Cattell.

SOCIETY MEETINGS

CLALLAM COUNTY MEDICAL SOCIETY

Clallam County Medical Society held a regular meeting at Port Angeles February 18. Guest speaker was E. B. Potter of Seattle, who described the methods to be used in establishing a blood bank and showed motion pictures of the process of collecting and storing blood and plasma. The society expects to establish a bank at Port Angeles.

GRAYS HARBOR MEDICAL SOCIETY

Grays Harbor Medical Society at its January meeting was addressed by Paul Flothow of Seattle as the guest speaker. He talked on "Facts and Fallacies of Intervertebral Disc Herniation."

February meeting was a business meeting. Voted to incorporate the society.

In March was held a dinner meeting, honoring State President George W. Cornett, Mr. Arthur Anderson, Executive Secretary and Mr. William T. Laube, Attorney for the State Association, who were guest speakers.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of Pierce County Medical Society was called to order in the auditorium in the Medical Arts Building, Tacoma, on March 10, President T. K. Bowles presiding. Minutes of the previous meeting were read and approved.

Cassius H. Hofrichter of Seattle presented a beautifully arranged discussion of the problem of "Peptic Ulcer, Diagnosis, Etiology and Treatment." Oscar S. Proctor of Seattle took up the surgical treatment of peptic ulcer, touching on surgical indications and types of operation.

Herman A. Dickel was accepted for membership. Applications of F. W. Hennings and C. M. McCandless were read and referred to the Board of Trustees.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society held its regular monthly meeting at the Grand Hotel, March 13.

Guest speakers of the evening were W. Ray Jones of Seattle, whose subject was "Gonorrhea, Its Pathology, Diagnosis and Treatment" and Edgar N. Layton of Colfax who gave a review of the medical literature and a case report on "Torsion of the Spermatic Cord with Complete Strangulation."

WOMAN'S AUXILIARY

The annual mid-year Board meeting of Washington Auxiliary was held in Seattle February 27 at the Olympic Hotel with the State Auxiliary president, Mrs. James Berge, presiding. Mrs. Chauncey Jones, chairman of the state Philanthropic Fund, reported that the State Advisory Council suggested no further contributions be solicited for the fund. It was voted to change the name to Emergency Fund and that the money to be retained in the bank. Mrs. J. T. Rooks of Walla Walla was appointed chairman of a State Teaching Plan for Hygeia Committee with Mrs. R. E. Mosiman and Mrs. Delmar Brice as members of that committee. It was announced that the spring issue of the State News Letter will be published in May.

At the luncheon following the business session, Mrs. R. E. Mosiman, National Auxiliary president, was the guest of honor.

Among the County Auxiliary activities in March, Spokane County held the annual Health Education meeting at the home of Mrs. David Hartin. Each member had the privilege of bringing guests to hear an excellent health program arranged by Mrs. Ralph Hanson. Dr. Alfred Adams spoke on "Infantile Paralysis," Dr. Frank Miller on "Possible Effect of War on the Tuberculosis Problem" and Dr. R. D. Reekie discussed "Present Trends in Cancer Treatment."

Pierce County Auxiliary held an open meeting this month. Mrs. John Gullikson, Public Relations chairman, presented Dr. Jennie Roundtree of the University of Washington Home Economics Department in a Nutrition talk to 150 members and guests in the Tacoma Y.W.C.A.

A no-host dinner at Monticello Hotel in Longview was enjoyed by twelve members of Cowlitz County Auxiliary on March 18. Mrs. Clyde Shirer of the Red Cross spoke to the group on "Blood Typing and Blood Banks."

Mrs. George J. Vandenberg,
State Chairman of Press and Publicity

WINNERS OF HYGEIA CONTEST

Auxiliaries with membership of 14 to 23: First prize of $40 to Chelan County, Wenatchee; second prize of $25 to Cowlitz County, Longview.

Auxiliaries with membership of 24 to 42: First prize of $40 to Walla Walla Valley.

State winners: First prize of $40 to Washington, Mrs. Delmar F. Bice, Yakima, Chairman.

SULFADIAZINE ABSTRACT BOOKLET A CONVENIENCE TO PHYSICIANS

With the usefulness of Sulfadiazine growing rapidly, it was felt that a booklet containing abstracts of significant recent articles would be of real convenience to physicians and others working with this important Sulfa drug. Accordingly, Lederle Laboratories, Inc., New York, N. Y., have recently made available a 64-page booklet, "Abstracts Selected from Published Articles on Sulfadiazine."

Ii order to compress significant material into a booklet of this size, every article on the subject appearing up to December 1, 1941, has been examined. Articles which contained only minor evidence as well as those which overlapped or reworked prior authorities have been eliminated. At the same time, no attempt was made to select the most favorable articles. The result is a terse, but authoritative review of material on Sulfadiazine, arranged topically for convenient reference. In most instances selected articles have been condensed to one page or less. In every case, bibliographies are supplied for those wishing to study the articles in full. This new booklet is available through Lederle representatives, or on request from Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York, N. Y.

CHICAGO SELECTED FOR 1942 CLINICAL CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS

Because of the war, the thirty-second annual Clinical Congress of the American College of Surgeons will be held in Chicago October 19 to 23, instead of in Los Angeles as originally planned. Headquarters will be at the Stevens Hotel. The twenty-fifth annual Hospital Standardization Conference sponsored by the College will be held simultaneously. The programs of both meetings will be based chiefly on wartime activities as they affect surgeons and hospital personnel in military and civilian service.

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, SEPT. 16-19, 1942

MEDICAL NOTES

Locations. Charles R. Manley, formerly of McMinnville, Oregon, has located in Sand Point and will practice at the Community Hospital.

L. L. Mauro of Orange, New Jersey, has moved to Nez Perce, where he will take over the practice of J. F. Dinsmore. John R. McMahon, a native of Shoshone, has returned to that city, where he will take over the practice of F. H. Howard. Dr. Howard has entered the medical corps of the Navy as lieutenant.

Hospital Head Resigns. H. S. Stahr has resigned his position as superintendent of State Hospital South at Blackfoot. He had asked to be relieved last August but was persuaded to remain. E. L. Berry, state health director, will assume duties of the superintendent without added compensation, while G. Ritter Smith, formerly of Burley, has been named head physician and surgeon at the hospital.

Annual Meeting Planned. Committee composed of C. W. Pond of Pocatello, chairman; E. N. Jones of Boise, H. L. Stowe of Twin Falls and G. O. A. Kellogg of Nampa are already laying plans for the annual meeting in September. It will be at Sun Valley, September 16 to 20, with postgraduate sessions under direction of members of the teaching staff of University of Oregon Medical School. War surgery, pathology, obstetrics and gynecology will be especially stressed.

David McClusky, son of the late A. F. McClusky of Buell, is opening a practice in that city and will occupy the same office formerly used by his father.

OBITUARIES

Alexander Barclay, Sr. of Coeur d'Alene, died February 27 at his ranch home in Arlington, California. He was 59 years of age. Dr. Barclay had been seriously ill with cirrhosis of the liver for three years. He received his medical education at the University of Minnesota Medical School, Minneapolis, graduating in 1907. He practiced for some years at Cloquet, Minnesota, moving to Coeur d'Alene in 1917. Immediately upon his arrival he identified himself with the Coeur d'Alene Hospital, of which he remained the manager until two years before his death.

He ceased practice three years ago but remained actively interested in all medical matters until even the last few days before his passing, and his influence was actively felt in all medical legislation up to and including the last session of Idaho State Medical Association.

He was Associate Editor of Northwest Medicine for many years and was a fairly voluminous writer on medical subjects, particularly appertaining to medical welfare. He had a host of friends, medical and otherwise, throughout the entire Pacific Northwest, and his death will be keenly regretted by a large number of the older members in medical circles.

Dr. James Marion Smith of Pocatello died February 15, aged 84. He was born in Carlinville, Illinois, December 31, 1857, and received his medical degree from Drake University College of Medicine at Des Moines, Iowa, graduating in 1888. He practiced in Minnesota, South Dakota and California and came to Idaho in 1899.. He had been retired for several years.

SOCIETY MEETINGS

POCATELLO MEDICAL SOCIETY

A meeting of Pocatello Medical Society was held March 5.

W. W. Bauer, Director of Health Education of American Medical Association, addressed the Woman's Auxiliary and their medical friends concerning "Health for Medical Defense" February 19.

The regular meeting of the Society had a good attendance from Pocatello and the other towns in this area.

R. S. Merrill, a new surgeon in Pocatello, presented a compilation of recent procedures in cases of skull fractures. Discussion showed several members to be well prepared to diagnose and treat such fractures.

A realistic moving picture showed astonishing results in treatment of Parkinson's syndrome by Bulgarian white wine extract of belladonna. Discussion brought out reports of other extracts of belladonna for the same treatments. An impression in favor of the Bulgarian white wine extract seemed to prevail at close of the session.

BOOK REVIEWS

Methods of Treatment in Postencephalitic Parkinsonism. By Henry D. von Witzleben, Elgin State Hospital, Elgin, Ill. 164 pp. $2.75. Grune & Stratton, New York, 1942.

The first chapter of this book is devoted to differential diagnosis, in which the author states the term postencephalitic parkinsonism has given rise to a great deal of misunderstanding. He adheres to the belief that it is not a sequela or a metadisease of acute epidemic encephalitis but is a form of chronic epidemic encephalitis, showing degenerative changes and a progressive inflammatory reaction. He also believes paralysis agitans (Parkinson's disease) is a disease distinct from postencephalitic Parkinsonism and sets down the points of differentiation in a table.

The rest of the book presents a complete review of all forms of treatment, a great many of which have been tried. Then he settles down to a thorough discussion of alkaloid therapy, notable large doses of atropine, the tolerance for which in encephalitic cases is well known, but which does not exist in paralysis agitans. Then he describes in great detail the origin of and method of preparation and administration of the so-called Bulgarian treatment. He cites results obtained with this treatment by Panegrossi in 1968 cases and 827 cases which the author himself has treated. The book is well written and covers the subject in a thorough manner. L. R. Quilliam.

Encephalitis. A Clinical Study. By Josephine B. Neal, A.B., M.D., Sc.D., F.A.C.P., Clinical Professor of Neurology, College of Physicians and Surgeons, Columbia University, etc. With Collaborators. 563 pp. Grune and Stratton. New York, 1942.

The author of this book is perhaps the leading authority on this subject in the country. She has had a wealth of clinical experience and has been in the vanguard of research on therapy. Emphasis is placed on the possibility of encephalitis complicating the usual childhood diseases with severe behavior problems and personality defects arising as sequelae. The probability of a chronic stage developing after the acute phase is impossible to forecast in any given case. Such sequelae consist of parkinsonism, torticollis, psychosis, hyperkinetic and dyskinetic phenomena and narcolepsy.

Bellabulgara is the best treatment of the parkinson cases. A new vaccine (F) is showing promise in arresting of chronic or even subacute progression of symptoms. Benzedrine is useful only for sleep disorders, Vitamin B_6 has not proven itself effective in these cases. This is the best book on this subject to date. Fred Lemere

Neuroanatomy. By Fred A. Mettler, A.M., M.D., Ph.D., Professor of Anatomy, University of Georgia School of Medicine, Augusta, Georgia. 476 pp., $7.50. The C. V. Mosby Co., St. Louis, 1942.

Most of the gross and microscopic features of neuroanatomy are well described and well illustrated in this new book. The arrangement and presentation of the material are well executed, making the book valuable both as a textbook and reference book. A list of selected references as well as an author's index, is appended to the text, which considerably enhances its value as a reference work. Although the text is written primarily to meet the needs of the medical student beginning instruction in neuroanatomy, it will be found to be of value to general practitioners as well. S. N. Berens

Communicable Disease Nursing. By Theresa I. Lynch, R.N., Ed.D., Instructor in Education, New York University, etc. With 156 Text Illustrations and 5 Color Plates. 678 pp., $3.75. The C. V. Mosby Company, St. Louis, 1942.

The size of this volume is indicative of the importance of efficient nursing in communicable diseases. It presents the subject as taught in modern hospitals and aims to simplify instruction for the use of student and instructor. Its purpose is not only to emphasize the technical phases of nursing, but to demonstrate the part the nurse may play by aiding in prevention and control of communicable diseases. Medical aspects of communicable diseases are not presented, attention being paid entirely to the question of nursing.

The fifty-four chapters are presented in four parts: orientation to communicable disease nursing, medical aspects and nursing care of communicable diseases, tuberculosis, the venereal diseases, communicable diseases and the community. Each chapter is devoted to a single disease, followed by a generous list of references with suggested readings. This volume offers comprehensive information of great value to the individual nurse, with abundant suggestions for instruction. Many illustrations offer practical demonstrations of the subject matter.

Year of Industrial and Orthopedic Surgery. Edited by Charles E. Painter, M.D., Orthopedic Surgeon, the Massachusetts Women's Hospital and Beth Israel Hospital, Boston. 432 pp., $3.00. The Year Book Publishers, Inc., Chicago, 1941.

This volume offers an excellent condensed review of the literature dealing with a large selection of orthopedic and traumatic conditions, appearing in the various medical periodicals for the year of 1941. It is needless to say that it is indeed worthwhile as a summary and review of this division of medical literature. The selection of material has apparently been made to include the most representative work and the most desirable articles. Therefore, as a brief resume of the literature this handbook is useful.

D. G. Leavitt

Diabetes Mellitus. By Zolton T. Wirtschafter, M.D., Clinician in Charge, Clinic for Diabetes, Department of Medicine, Mount Sinai Hospital, Cleveland, etc., and Morton Korenberg, M.D., Former Fellow, May Institute of Medical Research, The Jewish Hospital, Cincinnati, etc. 160 pp., $2.50. The Williams & Wilkins Company, Baltimore, 1942.

This text is a unique monograph on the subject of diabetes mellitus. The first eleven chapters, covering 125 pages, deal with the pathology, normal and abnormal physiology of diabetes. They contain many references to a very extensive literature covering the period, during which the major portion of our scientific knowledge regarding diabetes has been acquired. The balance of the monograph pertains directly to the disease and its treatment. The subject matter is distinctly orthodox. Methods outlined for treatment conform closely to those advocated by physicians and surgeons giving special attention to this condition. This is an excellent monograph and should be in the library of everyone handling diabetic patients. L. J. Palmer.

The Art and Science of Nutrition. A textbook on the Theory and Application of Nutrition. By Estelle E. Hawley, Ph.D. and Grace Carter, B.S. The University of Rochester School of Medicine and Dentistry, Rochester, N. Y. With 140 illustratoins, including 12 in color. The C. V. Mosby Co., St. Louis, 1941.

This book is written in five parts, as follows: *Normal nutrition,* explaining the processes of digestion and metabolism and the role of endocrines. It includes classification of foods (proteins, fat, carbohydrates, minerals, vitamins, water balance and roughage); *Food requirements under special conditions,* such as pregnancy, lactation, feeding of infants and children, etc.; *Diet therapy,* showing use of diet in association with care in the various diseases; *Choice, preparation and serving of foods,* giving suggested outline for lectures and laboratory lessons in nutrition and cookery, meal planning, etc.; *References* which have been classified according to the subject they cover, such as allergy, anemia, circulatory diseases, diabetes mellitus, diet planning, etc.

The appendix reviews the information given in tabulated form and includes a very complete table of the composition of foods. The material included in this book is intended for study by the nursing profession, to give them a scientific knowledge of food and its uses and when, why and how modification of the normal diet may be necessary. It has been so written that it makes interesting reading. Considerable space has been given to a discussion of minerals and vitamins. C. H. Hofrichter.

NORTHWEST MEDICINE

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

INCONSIDERATE HOARDING

The sudden precipitation of our nation into total war has resulted in the elimination of certain articles of common use which have been considered more or less essential. This has been due to transforming so many of our great industries into manufacturing needed equipment for carrying on our great war endeavors. Much has been published also concerning the prospective shortage of certain foods which has resulted in inconsiderate hoarding on the part of greedy individuals who insist they must make themselves secure in obtaining more than their fellows of what they consider essentials for comfort.

More recently it has been announced that the prospect of bombing on our coasts has inspired many individuals to hoard articles which they think are necessary for their first aid efforts in case of attack. It has been asserted by the Office of Civilian Defense in Washington, D. C., that this inconsiderate hoarding has been carried to an alarming extent on the part of certain persons in accumulating stores of gauze, bandages and other first aid equipment. It is said that for the most part these hoarded articles could not be used by the individuals possessing them. Wounds liable to be inflicted as the result of bombing will be of such a serious character that they can be treated only by those trained for such emergencies. Every individual should possess simple first aid knowledge which would enable him to avert fatality until the experienced helpers arrive to take charge of the wounded.

It is stated that in some sections air raid wardens have been deluded by the notion that they must be prepared for first aid service, of which very few of them are capable. They should not influence people to accumulate these unnecessary stores of first aid materials. It is asserted that in some sections this hoarding has been carried on to the extent of limiting available materials which will be of vital necessity in case of raids. Here is an opportunity for physicians to advise patients and friends to abstain from such inconsiderate hoarding, contenting themselves with the simple supply of first aid materials which should be found in every household.

BLOOD DONATION AS WAR SERVICE

Since the value of blood plasma for relief of burns, wounds and shock has been firmly established, it has become a vital necessity for treatment of war casualties. Nationwide collection of plasma has been assumed by the American Red Cross which has established depots in many cities for receiving blood contributions. It is estimated that during 1942 the Army and Navy will need a minimum of 930,000 units of plasma, which will necessitate contributions from more than a million donors. It is stated that the amount of blood received from a donor is placed at 3.5 cc. per pound of weight for men, with 3 cc. for women. This will average something more or less than 500 cc. per donor.

In order to obtain the needed blood plasma as expeditiously as possible, physicians and helpers in different cities have undertaken to collect definite amounts of blood for this purpose. As example, the medical units of the Seattle Defense Commission have agreed to obtain 3,000 pints of plasma which will require 7,000 donors. At this writing more than 1,900 donors have contributed sufficient blood to produce 900 pints of plasma. This illustrates the necessity of securing as soon as possible a large number who are willing to contribute this service. They must be between twenty and sixty years of age, and in good condition of health. Needed laboratory work will be done to assure the quality of blood received. Donors receive no compensation for this contribution, it being purely a form of war service which they can perform in promotion of the national war effort. In order to accelerate the necessary accumulation of blood plasma, physicians can aid in this work by soliciting donors among their friends and patients, with assurance that none will suffer injury or inconvenience from the donation of the necessary amount of blood. This is a form of service which can be performed by a large number of willing men and women.

SUPREME HUMANITARIAN ACCOMPLISHMENTS

During past years in various parts of the world various institutions have accomplished much for relief of human ailments and promotion of public welfare. None of them have compared in magnitude of demonstrations and multiplicity of accomplishments with results which have been attained by The Rockefeller Foundation. The published review of its work[1] during 1941 demands the admiration and wonder of anyone who will consider its achievements. Over $9,000,000 were appropriated in the six major fields of public health, medical sciences, natural sciences, social sciences, humanities, program in China. The fields of expenditures of the Foundation were distributed not only to various parts of our own land but to other nations of our hemisphere, Europe, Asia, Africa and isles of the Pacific. These activities have been continuous through the years, suspended only at present by the greatest of wars on the continent of Europe, China and Pacific islands. Only by perusing this published review can one appreciate the manifold and varied accomplishments of the Foundation. Amazed at the extent of these great works, one wonders as to the source of the scientific experts required for their attainment. "No amount of pressure can suddenly create a supply of thoroughly trained and broadly experienced physicists, mathematicians, chemists, biologists, economists and political scientists. These men represent the trained intelligence without which a war cannot be won or a lasting peace achieved."

The review discloses that war has not checked the beneficent work of the Foundation. While certain established fields of activity have been temporarily suppressed, a goodly portion of its appropriations are being expended for the present emergency. "For example, the Foundation is furnishing yellow fever vaccine for the Army and Navy; it is speeding up its research in influenza, malaria and typhus, which have a vital bearing on the war; it has financed the microfilming of countless historical records in England that might be destroyed; it has given aid to the development of brain surgery necessitated by war wounds; it has tried to salvage as much of the scholarship of Europe as possible by bringing outstanding university men to the United States." Thus it is being demonstrated that the beneficent accomplishments of the Foundation are being constantly expanded, regardless of restricting impediments.

Envisioning world conditions at the termination of the war, it is assured that a new kind of cooperative life must be built on a worldwide scale, in which science and knowledge will participate. "Although wars and economic rivalries may for longer or shorter periods isolate nations and split them up into separate units, the process is never complete because the intellectual life of the world, as far as science and learning are concerned, is definitely internationalized, and whether we wish it or not an indelible pattern of unity has been woven into the society of mankind." Whatever may be our international jealousies or suspicions, nations depend on each other for scientific attainments. The scientist may be from Japan, Russia, Germany, France, Italy, as well as Britain or the United States, yet his accomplishments will be available to all mankind. In no branch of human endeavor have these facts been more forcibly demonstrated than in the attainments and blessings produced by medical science. One cannot be unmindful of the supreme influence and activities of The Rockefeller Foundation in obtaining these results.

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[1] The Rockefeller Foundation. A Review for 1941. By Raymond B. Fosdick, President of the Foundation. New York, 1942.

CIRCULATION OF BILE ACIDS

Jaundice frequently presents the surgeon with a dilemma of no mean proportions. If the decision is not correctly made, he may institute surgery too soon and thus harm his patient, or he may delay the operation and thus rob the sick man of the benefits which might have been given. If jaundice is due to obstruction of the bile ducts, operation should be resorted to as soon as possible. However, if the condition is due to liver disease, hepatic jaundice, then surgery is capable of causing the patient great harm. Hence the dilemma.

New light is occasionally shed upon the devious and darkened pathways of liver physiology which, if utilized, may help in answering some of these clinical problems. Josephson[1] has recently reviewed the physiology of the bile acids and pointed out certain phases of their circulation which may be brought to bear on the problem.

The bile salts, as they appear in the intestine, are usually the sodium salts of glycocholic and taurocholic acids. Cholic acid is produced by the liver cells and by them is conjugated with taurine and glycine to form glycocholic and taurocholic acids. Since more glycine than taurine is available in the human economy, the corresponding conjugated acid predominates. These substances are excreted into the bile ducts, are utilized in the intestine in the process of fat digestion and after use are absorbed into the blood stream, carried to the liver and reexcreted into the bile ducts for use again. Only about one-third of the bile salts utilized in one day are actually manufactured by the liver in that time.

Should obstructive jaundice supervene, the bile salts continue to be manufactured by the undamaged liver cells but they cannot be excreted into the biliary system. When sufficient pressure arises in the biliary tree, the lymph spaces of the liver open up and the bile salts are driven into the lymph vessels, eventually finding their way to the thoracic duct, whence they enter the general circulation.

If, on the other hand, the liver cells are damaged, giving rise to hepatic jaundice, they are no longer capable of forming the acids or excreting those already formed into the bile ducts. By the same token they are no longer able to conjugate glycine with substances other than cholic acid. The latter fact is made use of in the hippuric acid test. In the normal liver benzoic acid is conjugated with glycine to form hippuric acid which is excreted in measurable quantity by the kidneys. In hepatic jaundice the formation of hippuric acid is interfered with and its excretion is, therefore, usually diminished.

Due to damage to the liver cells in hepatic jaundice, there is little formation of bile acids so that there are relatively small amounts present in the blood stream. In obstructive jaundice, however, there may be a much higher level of bile acids in the circulating blood. Most important factor, according to Josephson, is the fact that, if additional bile salts are injected into the blood stream, they are promptly cleared by the intact liver cells in obstructive jaundice but are not readily removed in hepatic jaundice.

Chemical means of determining the blood bile acids are too complicated to be useful as a clinical test. Josephson suggests a simpler test based on surface tension phenomena which will give relative values so that clearance of the bile salts may be checked after injection into the blood stream. The test has not yet been disclosed but it should be another valuable tool in the hands of the surgeon confronted with the dilemma of a jaundiced patient.

AN OUTSTANDING PROGRAM

While some medical programs have been cancelled on account of war emergency, the Pacific Northwest Medical Association has scheduled an annual meeting at Portland, June 17-20, with a list of ten distinguished physicians as guest speakers. The titles of their papers and their likenesses are presented in this issue. This is a program which will be most attractive and instructive. Undoubtedy it will attract a large attendance of physicians in the Pacific Northwest (pages 172 and 173).

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[1] Josephson, B.: Circulation of Bile Acids in Connection with their Production, Conjugation and Secretion. Physiol. Rev., 21:463-486, July, 1941.

ORIGINAL ARTICLES

LESIONS OF THE INTERVERTEBRAL DISC*

FACTS AND FALLACIES

Paul G. Flothow, M.D.
SEATTLE, WASH.

There is probably no single surgical entity which has received a greater build-up than the subject of herniated or protruded intervertebral disc as a cause of low-back pain and sciatica. The literature on this subject is voluminous. From one institution alone more than twenty articles have been written. It is not surprising that this tremendous outburst should engender a certain amount of scepticism. It is my feeling that this scepticism is in some measure warranted, and it is the purpose of this paper to attempt to enlighten the sceptics and perhaps to some degree dampen the enthusiasts.

HISTORICAL DATA

There is no reason for going into a long, detailed history of the literature on the subject. If anyone is sufficiently interested, he may pick up almost any medical journal and find it in a current article.

For many years neurosurgeons have been removing cartilaginous bodies from the spinal canal, and have classified these lesions as chondromata. Dandy[1] was apparently the first to recognize the true nature of these lesions in 1929. It remained for Mixter and Barr,[2] however, to really direct the attention of the profession to this clinical entity. Since the time of their report it has rapidly become "open season" on discs all over the country. Whenever such enthusiasm occurs there are bound to be many errors in judgment which lead to poorly conceived and poorly executed operations.

The boom in discs has resulted in the formulation of many questions, the chief of which I shall endeavor to answer to the best of my ability in this paper. Many of these questions are ones I have asked myself, and I feel that I have found some of the answers, answers at least, that satisfy my own questions.

INCIDENCE

The first question which might properly arise is, *why does Dr. X see so many disc cases and why does Dr. Y see none?* The answer is really very simple. It is only necessary for the individual physician to become disc-conscious, and a disc case will promptly appear in his office followed by several more in short time. On the other hand, the man who is not particularly disc-conscious sees none of these cases, at least he does not recognize them. If he is disc-conscious, it then becomes a question of diagnostic ability, not of the individual doctor alone, unless he does his own roentgen and fluoroscopic work, but also of his diagnostic aide, the roentgenologist.

For the first year or two after the disc comet flashed across the horizon, I was in the category of Dr. Y. I could not understand why other neurosurgeons in the country were seeing so many discs and I was not seeing any. Now I realize the reason I was not seeing them was because I did not know how to diagnose them, and if I did suspect a disc, I did not have the courage to inject lipiodol, the only way open at that time to make a definite diagnosis. This hesitation regarding the use of lipiodol had arisen because of reports in the literature extolling its dangers. Soon, however, I was forced to resort to lipiodol, and from that time on I began finding herniated discs.

My percentage of error in the first cases was very high, owing to the fact that I had had no experience in the use of lipiodol as a diagnostic measure, and neither had my roentgenologic confreres. As a consequence, my batting average on the first four cases was exactly fifty per cent. Of four which I felt were roentgenologically positive only two disclosed positive lesions at operation. Fortunately, about this time aid appeared in the person of a roentgenologist who had had a wealth of diagnostic experience with these lesions, and since that time my average has closely approached one hundred per cent. In the last three years a positive lesion has been found in all but one of my own cases in which lipiodol has been injected.

To answer this question further, an amazing situation exists. The final diagnosis of these cases follows the suspicion of the general man who sees them first, and it is surprising that most of the diagnoses with which I am familiar have resulted from the work of comparatively few men. Once a man becomes familiar with the cardinal points in the history and findings which lead to the suspicion that a disc may exist, then he begins to find them.

DIAGNOSIS

What are the cardinal points which should lead one to suspect the presence of herniated disc? First of all, the history of recurrent attacks of low-back pain, occurring over a period of many months or even years, usually associated with sciatic reference of pain, should immediately arouse suspicion. If the patient says that he had a back injury several years previously followed by backache for several weeks which was relieved by conservative measures, only to recur again upon lifting or straining, or even without this type of trauma, to be again relieved only to recur repeatedly, one's suspicion should be very definitely aroused.

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*Read before a meeting of Chelan County Medical Society, Wenatchee, Wash., March 4, 1942.

[1] Dandy, W. E.: Loose Cartilage from Intervertebral Disc Simulating Tumor of Spinal Cord. Arch. Surg., 19: 660-672, Oct., 1929.

[2] Mixter, W. J. and Barr, J. S.: Rupture of Intervertebral Disc with Involvement of Spinal Canal. New England J. Med., 211:210-25, Aug. 2, 1934.

The type of injury that is most apt to cause herniation of the disc, in my experience, is one in which the patient has fallen on his buttocks. Twisting strains during lifting are another very common cause, and a third one is a sudden, sharp, severe pain in the back occurring in the act of extremely heavy lifting. In my series approximately seventy-five per cent of the patients have given the history of a back injury preceding the onset of their symptoms. While it is not necessary to have sciatic radiation, the majority of my patients have had this symptom either unilaterally or bilaterally.

There are certain points in the history that are very suggestive. These patients frequently have pain referred to the sciatic distribution on coughing or sneezing. Very frequently they find a certain position in which they are perfectly comfortable as long as they remain in it, and find other positions that always produce their pain. They give a history of paresthesias, numbness, occasionally tingling in the extremity, and at times even involuntary jerkings of the extremity involved.

The neurologic findings which lead to a clinical diagnosis are quite simple and do not require special neurologic training for their discovery. They are as follows: (1) spasm of the lumbar muscles, (2) limitation of motion of the back, (3) tenderness over the lower lumbar spinous processes, (4) absence or diminution of an Achilles or patellar reflex, or both, on the affected side, (5) atrophy of the calf, thigh or gluteal region, (6) sensory disturbance: diminution, most frequently found on the outer side of the foot and over the calf of the leg, (7) limitation of straight leg raising and positive Lasegue test, (8) tenderness along the course of the sciatic nerve, (9) production of sciatic pain by jugular compression (Naffziger test).

Since herniated disc is apparently so common, what has happened to the thousands of discs that must have been scattered all over this country and were not operated upon previous to the discovery of this entity so recently as 1934? If the incidence of this condition is as high as it would seem to be, considering all of these cases that are being operated upon, why is it that we do not have hundreds of thousands of disc cripples roaming our streets? The answer to this one is also quite obvious, if one gives it some thought. It can only be that by far the greater percentage of these cases heretofore have either been cured by conservative measures or spontaneously. Since a comparatively small percentage of them have had no specific operations such as fusion, it must follow that the vast majority have been relieved by nonsurgical measures. What these percentages might be must always remain a matter of conjecture as there is no possible means of determination. This brings us to the point of considering the various measures that were applied in these cases before the modern surgical attack.

It is quite certain that many of these cases had fusions performed, and some were undoubtedly cured. However, many were not. Some orthopedists would have us believe that the method of choice in treatment of these cases is fusion. We cannot agree with this concept for several reasons. First of all, even though a fusion were successful in one hundred per cent, which it is far from being, the operation is much more serious than the neurosurgical type that is done at the present time. The matter of fusion will be discussed later. In my own experience I have seen three patients with herniated disc who have had fusions and who were not only unrelieved, but were made worse.

CONSERVATIVE TREATMENT

One of the common conservative measures used in so-called sciatica was epidural injection of novocain or saline or both. This is an extremely simple procedure and one that I have performed many times for so-called disabling sciatica. The percentage of success with this perfectly innocuous procedure was over fifty. Since I am quite sure that many of these cases in which I have performed epidural injection with relief must have had herniated discs, it immediately becomes apparent that such a simple procedure is one that could certainly be tried in early and acute cases before resorting to major surgery.

Eighteen months ago I had a case that had all of the cardinal findings, both in history and in examination, of a herniated disc. He had pain, atrophy, sensory disturbance, absence of Achilles reflex, muscle spasm; in fact, he was an ideal textbook picture. This man could not afford to leave his job for an operation, and with a great deal of scepticism I suggested epidural injection as a possible means of relief. One injection of novocain and saline epidurally completely relieved his pain within a few days and he was back at hard manual labor in less than a week. He has had no further trouble. While it is true that the diagnosis was not verified by either air or lipiodol injection, I am positive that this man had a herniated disc. In two subsequent cases, both of which had all the clinical findings of herniated discs, the same procedure was followed and a like result obtained.

From this experience I have come to the conclusion it is highly probable that many of the cases previously relieved by means of epidural injection actually had herniated discs. In addition to these measures undoubtedly various methods of physical therapy, manipulation and extension, immobilization of the back, and braces have all given their share of relief, not to mention the countless cases in which relief has occurred spontaneously.

The point that I am leading up to is that I believe a large percentage of these cases may be relieved by conservative measures, particularly the rather acute cases with a short history, and it is my feeling that operation or even myelography is not indicated or justified in most cases, whose history occupies anything less than six months. There are, of course, exceptions to this rule, where the condition is so extremely acute, and conservative measures so ineffective that operation must be performed earlier. I certainly feel that, if it is possible, at least three months of conservative treatment should be allowed before surgery is resorted to.

In addition to the cases above mentioned I have seen a number of others, which I like to call acute herniated discs, where there has been a short history of perhaps a few days or a few weeks duration and I am quite certain there has been a protrusion of the intervertebral disc. These patients have been entirely relieved by conservative measures. Let me, therefore, emphasize my belief that the diagnosis of herniated disc does not immediately call for surgery, and a large percentage of these cases can be spared surgery and relieved by conservative measures properly applied.

MYELOGRAPH

How can a positive diagnosis of herniated disc be made? There is only one absolute method of diagnosis, and that is by means of the intraspinal injection of lipiodol and careful performance of fluoroscopic study by one experienced in the diagnosis of these lesions.

This brings up the question of myelography. There is no doubt that a large percentage of cases can be positively diagnosed by air. There is also no doubt that a negative air study is not at all diagnostic and does not in any way rule out herniated disc as a cause of symptoms. A further commentary on the use of air is the fact it has been demonstrated repeatedly that, where a single lesion is diagnosed by air, multiple lesions may be found when checked by lipiodol.

The advantage of myelography is its simplicity and the fact that the air absorbs and leaves no traces. Its disadvantages have already been enumerated. It boils down to this. I am not willing to accept air as a positive diagnosis when the study is negative. If the clinical signs warrant the diagnosis, then a negative air study should be followed by lipiodol. If air study is positive, I have made it a practice to check with lipiodol because we have found multiple lesions where the air revealed only one. Since we are going to end up with lipiodol in order to make a positive diagnosis, if any contrast medium is going to be used, why bother with air in the first place? I would just as soon depend upon my history and clinical findings, as a matter of fact, more so, than upon air alone. One should either use lipiodol, if any contrast medium is used, or depend on the clinical findings and history, and then proceed with the operation.

I feel that my accuracy without any contrast medium would be greater than it would be if I put my faith in the diagnosis revealed by myelography. In many clinics lipiodol has been abandoned in favor of air, and even though the air studies are negative, exploratory operation is performed if the clinical findings warrant it. Unfortunately, it is difficult to differentiate clinically between lesions of the third, fourth and fifth lumbar interspaces. If we are going to explore anyway why not inject lipiodol, most of which can be removed at the time of operation, in order that the lesion can be definitely located in the proper interspace, limiting surgery to a single interspace rather than an exploratory which may mean disturbing a number of them.

Dandy[3] has recently made a plea for elimination of contrast media and has called attention to an interesting condition which he designates as concealed ruptured intervertebral discs. He reasons that, since in his experience 96 per cent of all discs lie either in the fourth or fifth lumbar interspaces about evenly divided, it is simply necessary to explore these two interspaces to find the lesion in the vast majority of cases. Lesions in the third interspace, he states, can be differentiated by the fact that the pain is in the anterior aspect of the thigh.

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[3] Dandy, W. E.: Concealed Ruptured Intervertebral Discs. J. A. M. A., 117:821-823, Sept. 6, 1941.

This has not been my experience. I have encountered several cases of his so-called concealed disc, have treated them in the same way by curettage, but find that the end-results in these cases are often not satisfactory, and, therefore, I question very much that such lesions are the primary cause of the patient's symptoms.

Spurling[4] states that the location of the disc can be very accurately determined neurologically, thus obviating the necessity of contrast medium. In my experience, while I am able to pick the proper interspace clinically in most instances, I feel that I still have too high a percentage of error to warrant depending upon my diagnostic acumen entirely.

This question may well be asked, *Is the use of contrast medium so disadvantageous as to warrant the exploration of two or even three interspaces in many cases, when the operation can be limited to one following the use of contrast medium?* I do not believe this question can be answered at this time. To me the answer depends upon whether or not it is a medicolegal or compensation case. If it is, lipiodol should be avoided if possible, and if air fails and clinical findings warrant it, then exploration is indicated. In private cases I feel that, if there is any doubt as to location, lipiodol should be used, particularly if the third interspace is under suspicion as well as the fourth and fifth.

If it were simply a matter of removing soft tissues without attacking bone, it would be relatively simple, and would make very little difference how many interspaces were explored, but, unfortunately, I find it necessary in more than half the cases to remove a certain amount of the laminae contiguous to the interspace above and below before I can adequately explore the interspace. Perhaps with more experience and after careful evaluation of clinical findings we may all be able accurately to pick the interspace in every instance and then most of our problems will be solved.

It is interesting to note in this regard that the diagnosis and accurate localization of the lesion in my first case of herniated disc was done without contrast medium. I still feel, however, that the percentage of error among surgeons operating disc lesions must be higher, if contrast media are entirely eliminated.

The question of the irritative qualities of lipiodol in my opinion has been greatly exaggerated. This has been best shown by Brown and Carr.[5] It is further proved by the following facts. There is no question whatsoever that, while the lipiodol is presumably removed at the time of operation, a considerable quantity of it may remain in many instances as shown by postoperative roentgenograms. I have never yet seen a private case that has had a disc removed that has shown any evidence whatsoever of the alleged irritative effect of lipiodol, even though postoperative roentgenograms show that a large quantity of lipiodol had escaped removal.

It is true that lipiodol, just as any other foreign substance, including spinal anesthesia, undoubtedly may act as an irritant to the spinal nerve roots when injected intrathecally. The one very reasonable objection to lipiodol is that which occurs in compensation cases. It is true that lipiodol continues to cast a shadow in the roentgenogram for many years, and this fact plus an assumed aggravation of symptoms may well be used by attorneys and patients to build a very strong medicolegal case. It is my practice, therefore, not to use lipiodol in such a patient unless I am very certain I am dealing with a herniated disc on the clinical evidence, and in addition am quite certain that the individual is psychologically amenable to being cured, regardless of compensation elements.

It is undoubtedly true that, if operation follows lipiodol injection within a period of a few days or a week, the nerve roots are apt to show signs of irritation, but exactly the same signs of irritation are present shortly after a spinal anesthetic or even after air myelography. If operation is not performed for several weeks after the lipiodol injection, it is rare, indeed, to find any evidence of irritation at operation. In my opinion, therefore, it is not necessary to remove lipiodol after negative findings except in compensation cases.

What does one do if lipiodol is injected and no lesion is demonstrated? If the clinical history and findings are definite, and a clinical diagnosis of disc is warranted, then the case should be explored in spite of a negative lipiodol, assuming, of course, that the severity of symptoms warrants such a procedure. This has been done, and even though a disc is not always found, the percentage of positive lesions warrants the operation, if the patient's complaints are serious enough.

If lipiodol has been injected with negative findings and the diagnosis cannot be positive enough to warrant an exploration, what should be done about the lipiodol? Where there is no compensation element, the lipiodol can be disregarded and no trouble will ensue unless the patient has been

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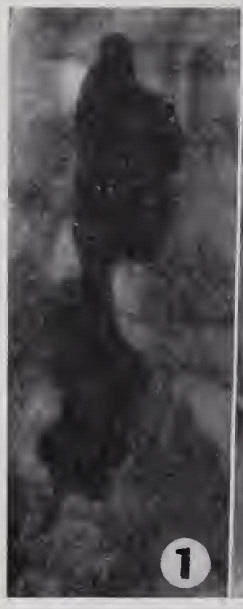
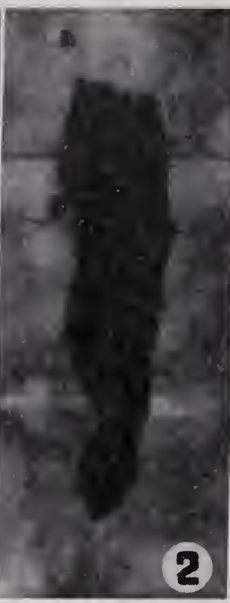
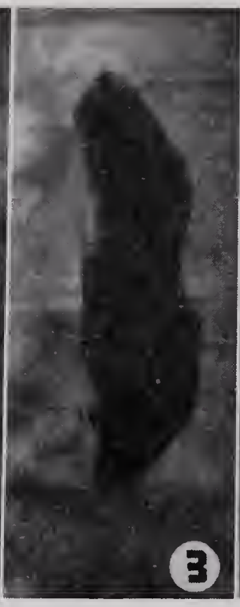
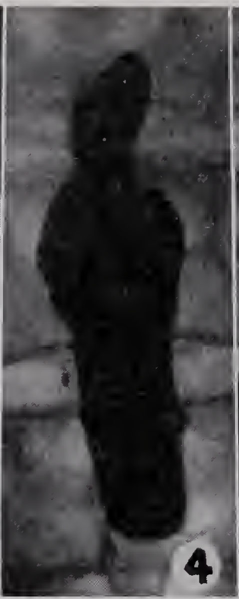
[4] Spurling, R. G. and Bradford, F. K.: The Intervertebral Disc. Chas. C. Thomas, Springfield, Ill., 1941.

[5] Brown, H. A. and Carr, J. L.: Effect of Lipiodol in Subarachnoid Space. Surg., Gynec. & Obst., 68:945-951, May, 1939.









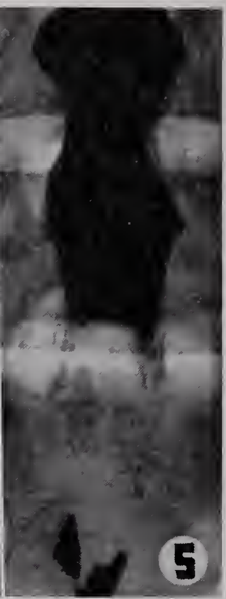
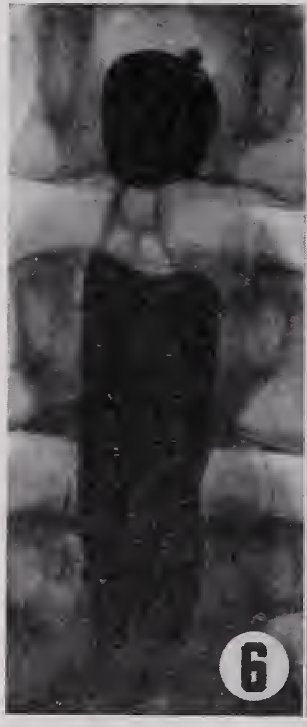


Fig. 1. Typical deformity of large herniated disc in third lumbar interspace.

Fig. 2. Shows rather typical deformity of true herniated disc in fifth lumbar interspace, and the lump deformity of protruded disc in fourth interspace.

Fig. 3 and Fig. 4. Showing deformities in fifth, fourth and third interspaces. This man had similar deformities in first and second spaces, all of them protrusions. None were true herniations. This case required fusion.

Fig. 5. Typical hour-glass deformity of hypertrophied ligamentum flavum. No disc was present. This man was relieved by operation.



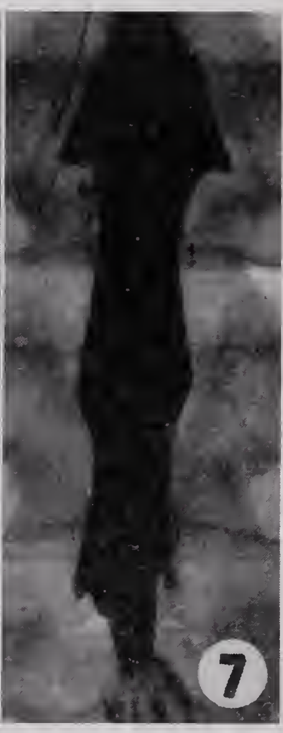


Fig. 6. Deformity of lipiodol column diagnosed as herniated disc which at exploration was found to be produced by enormous varicosity of posterior epidural vein.

Fig. 7. Complete blocking of lipiodol column at second L. S. Diagnosed recurrent disc. Exploration revealed extensive adhesion arachnoiditis.

warned by some "kindly" medical confrere regarding serious aftereffects to be expected, and then the resulting symptoms are psychologic and not organic. If it is a compensation case, it is wise to remove the lipiodol which can be done by making a trephine opening over the lower portion of the dural sac in the sacrum, sitting the patient up and allowing the lipiodol to run out. This may be done under local anesthesia, and is not a serious undertaking.

ROENTGEN DIAGNOSIS

I have emphasized the importance of the roentgenologist in the diagnosis of these lesions, since after all he is the one who determines our course, if we are not willing to operate on the clinical findings. The percentage of error is inversely in proportion to the experience of the roentgenologist. In my early cases the percentage was high. In the last two years I have explored only one case without finding definite pathology, and that was perhaps my fault and not the roentgenologist's.

There is, however, one condition in which I must disagree with the usual roentgenologic diagnosis, and this comes by virtue of experience in dealing with individual lesions at the operating table. These are the cases where a definite deformity is seen both fluoroscopically and on the films which undoubtedly denotes the presence of a protruded intervertebral disc, but in my opinion does not indicate a herniated disc. I differentiate these two lesions. This is particularly true where multiple lesions are found. The typical deformity of the herniated disc is a definite punched-out shadow such as illustrated in figure 1. When this type of deformity is demonstrated, there is no question whatsoever as to what the operative findings will be. However, when the deformity is in the nature of a hump somewhat in the shape of a rounded V, one should be suspicious of the fact that he is dealing with a protrusion of the disc and not a herniation (fig. 2). If this hump-type of deformity is multiple, even more suspicion should be aroused (fig. 3,4).

I am unable to ascertain what the true results in operations on the protruded type of disc have been, since most of them have occurred in compensation cases, and these are very difficult to evaluate. It is apparent, however, that the percentage of successful results in this type of case is considerably less than when the deformity is the typical single, punched-out lesion. There is a fallacy in this statement because the occasional case of this type has turned out very well. I am quite loath to operate on this type of case unless the clinical findings are very positive, and even then I do so with a certain amount of trepidation. This element regarding the outcome is present in every compensation case which we will discuss later.

At times it is rather difficult to differentiate between the deformity caused by herniation or protrusion of the disc and that caused by hypertrophy of the ligamentum flavum. I have attempted to differentiate between herniation and protusion, and they may usually be differentiated from hypertrophied ligamentum flavum by the location of the deformity. The deformity caused by an hypertrophied ligament is on the dorsal aspect of the canal, whereas those caused by herniation and protrusion are on the ventral aspect. When the deformity is in the shape of an hourglass (fig. 5) we are most apt to be dealing with hyperthrophy of the ligamentum flavum rather than herniation or protrusion of the disc.

I have encountered cases of hypertrophied ligaments which roentgenologically could not possibly be differentiated from protruded or even herniated discs, because of the fact that the hypertrophied ligament extended well around on the anterior surface of the spinal canal, thus giving an anterior as well as posterior and lateral deformity, causing the roentgenologist to diagnose herniated or protruded disc associated with hypertrophy of the ligamentum flavum. This diagnosis is warranted because the two conditions are usually associated.

There are lesions other than herniated or protruded discs which cause myelographic deformities. Spinal cord tumor, naturally, causes deformity, but this is usually readily differentiated by the roentgenologist. I have had one case in which an extremely large venous plexus gave a typical deformity diagnosed as herniated disc. This is a possibility which should be remembered (fig. 6). Another condition which must be considered among the causes of deformity of the lipiodol column is adhesive arachnoiditis (fig. 7). This may usually be differentiated from various other conditions by its characteristics. Rather than causing a punched-out defect it is more apt to cause a complete obstruction with a dribble of lipiodol past the obstruction in several places.

It would be well at this point to clarify the various pathologic entities with which we are dealing. I have seen no account in the literature, differentiating between herniation and protrusion of the intervertebral discs. To the best of my knowledge these two conditions have been considered synonomous and the terms have been used interchangeably. It is my opinion that they should definitely be differentiated, both clinically and pathologically.

DIFFERENTIATION OF LESIONS

Herniation of the disc has certain characteristics differing from those of protrusion. First of all, from a roentgen standpoint, as before mentioned, a herniated disc causes a definite punched-out shadow in the lipiodol column (fig. 1), whereas a protruded disc causes a more rounded V-shaped deformity (fig. 2). At surgery the herniated disc promptly extrudes itself, when the posterior longitudinal ligament is incised, and may be easily removed. The protruded disc does not extrude when the ligament is cut, and it is necessary to take it out piece-meal by means of curetting and actual sharp dissection. The substance removed is of a much denser cartilaginous nature than is that found in herniated discs, and its surgical removal at times offers considerable difficulty.

True herniation of the disc in my experience has always been a single lesion. Where multiple lesions are present, they are most apt to be of the type defined as protruded discs. On several occasions when dealing with multiple lesions I have found one true herniation of the disc associated with one or more protrusions.

In my opinion the two conditions have a different etiology. The true herniated disc is most apt to be caused by definite trauma, and frequently a single instance of marked trauma, whereas the protruded disc is more frequently associated with cases giving a history of repeated minor traumata or repeated insult to the back rather than one definite, severe injury. For this reason I feel that the protruded disc is more likely to be a congenital or developmental condition produced by the mechanics of the structure of the back, plus the occupation of the individual, associated with long continued back strain, whereas the herniated disc is an actual herniation due to a single trauma. It is this concept which I feel explains the fact that at routine postmortem examination many cases of herniation of the disc structures into the spinal canal are found in patients having had no history of low-back or sciatic pain.

In other words, I believe there are many individuals having this type of defect who are not having symptoms as a result thereof, but where the individual, who has this congenital deformity which is frequently associated with bony anomalies of the back, engages in an occupation requiring repeated back strains or repeated minor back injuries, there is gradual thickening of the ligamentum flavum which is nature's effort to immobilize the joints. When this thickening of the ligament encroaches sufficiently on the space of the spinal canal definitely to constrict the nerve roots between itself and the congenitally protruded intervertebral disc cartilage, then trouble begins.

This concept, I believe, is very tenable by virtue of the fact that in my own experience I have never seen one of these hard, protruded intervertebral discs in a woman. They have always been in men of the laboring class. Every case that I have ever dealt with in a woman has been a soft, easily removable type of herniated disc.

Because of the fact that these protruded discs are probably congenital and frequently associated with bony anomalies of the back, practically always in laboring individuals and many times in compensation cases, the results from surgical removal in many of them are bound to be less successful than those following the removal of the true herniated disc. The reasons I feel are rather evident. First of all, we are dealing with congenital malformations of the back, and structurally weak backs, so that we have a great deal more pathology present than just the protruded disc itself. Furthermore, many of these are compensation cases in whom the results are notoriously unpredictable.

(To be concluded)

PARROT FEVER FROM COMMON PIGEONS

The case of a policeman with psittacosis (parrot fever) whose only known contact with birds was with common pigeons, is reported in *The Journal of the American Medical Association* for April 4 by Henry Alicandri, M.D., Brooklyn. He points out that the disease, which is highly communicable, has been transmitted to man by parrots, parakeets, love birds and rarer birds of the parrot family and that this isolated case warrants closer investigation of pigeons as a possible source of infection.

NONOPERATIVE REMOVAL OF INTRASPINAL LIPIODOL AND THOROTRAST*

Ernest Burgess, M.D.
and
Roger Anderson, M.D.
SEATTLE, WASH.

The use of radiopaque injectable material in the subarachnoid space for myelography is of great diagnostic value. Two solutions are commonly employed today, lipiodol and thorotrast. Lipiodol is chemically combined iodine and poppyseed oil containing, when used for myelography, 40 per cent iodine by weight. Thorotrast is stabilized colloidal thorium dioxide containing 25 per cent ThO_2.

Each of these two agents presents certain objectional features. Lipiodol, being oily, is not absorbed. Unless removed, it remains permanently in the central nervous system. Although many reports attest its symptom-free presence, there is certain evidence that it may cause mild irritation, at least temporarily. From the medicolegal standpoint the presence of residual lipiodol with its ease of visualization is a consideration. There is also definite possibility of pressure on the lower spinal nerve roots from the actual weight of lipiodol when the patient is standing. As a contrast medium, however, it has proved excellent. It casts a dense shadow, permitting accurate diagnosis by means of film or fluoroscope.

Thorotrast, while somewhat miscible with spinal fluid, frequently does not cast shadows of sufficient density to permit accurate fluoroscopy. It is radioactive, and theoretically should not be left in the spinal canal over any period of time.

The immediate nonoperative removal of these substances following roentgen diagnosis is the desired goal. With such a technic available, their use can be extended to a great many borderline cases, where at present the surgeon hesitates since the findings may not warrant immediate operation.

Following is a description of the technics we employ for needle removal of lipiodol and thorotrast. The technic for thorotrast removal is essentially that of Diveley[1]. That for lipiodol removal is modified from the method described by Kubik and Hampton[2] and has proved the only simple one successful in our hands.

LIPIODOL

A routine spinal tap with a moderately large needle is made above the site of suspected lesion

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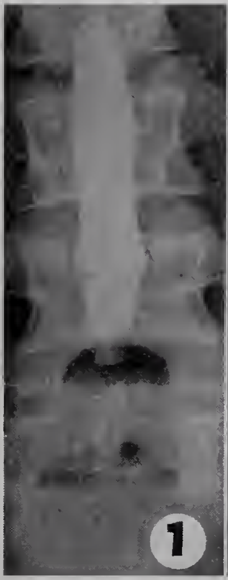
*We are indebted to Dr. Thomas Blake of Seattle for his constructive and helpful suggestions and cooperation in this work.

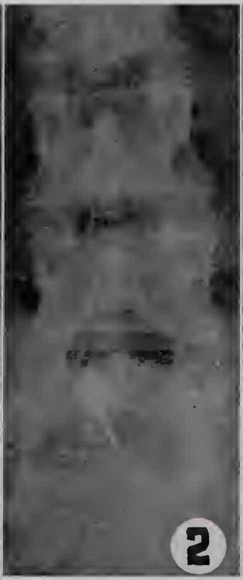
[1] Diveley, R. L.: Personal communication.

[2] Kubik, C. S. and Hampton, A. D.: Removal of Iodized Oil by Lumbar Puncture. New England J. Med., 224:455-457, March 13, 1941.

(second lumbar interspace for cases of suspected intervertebral disc protrusion). Five cubic centimeters of spinal fluid is withdrawn. Five cubic centimeters of sterile lipiodol, warmed just to room temperature, is injected slowly through the needle into the subarachnoid space and the necessary roentgen studies made at once.

To withdraw the lipiodol, the patient is placed on his side and a large needle inserted through the lumbosacral interspace into the canal. If the lumbosacral angle is exaggerated and one cannot introduce the needle through the interspace from the midline posteriorly, a lateral (Taylor[3]) approach can be made. With this approach the needle is inserted just below the posterior superior iliac spine from either side and passed diagonally up along the back of the sacrum, entering the lumbosacral interspace lateral to the midline.





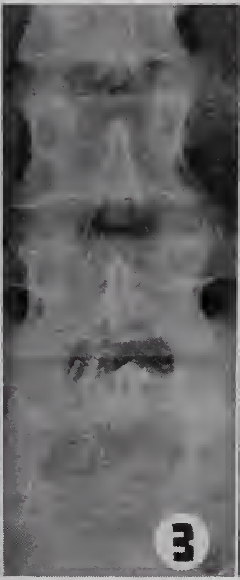
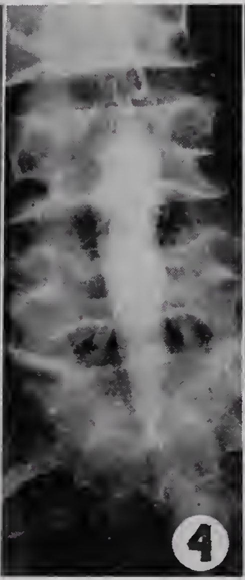


Fig. 1. C.B. 5 cc. of lipiodol injected into the second lumbar interspace.

Fig. 2. Same patient, one hour following fig. 1. A needle has been introduced into the lumbosacral interspace and oil has been withdrawn. Needle is seen in place.

Fig. 3. Same patient, needle removed. Only minute traces of lipiodol remain.



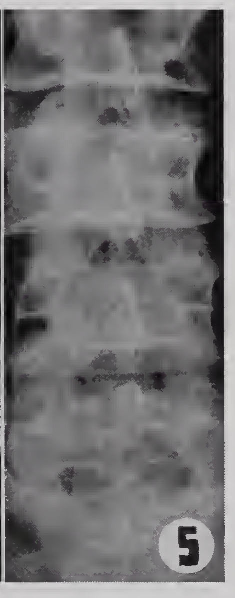


Fig. 4. J.G., 8 cc. of thorotrast injected intraspinally into the second lumbar interspace.

Fig. 5. Same patient the following day. The thorotrast has been removed by transspinal irrigation with Ringer's solution.

The patient is then carefully rolled over flat on his face and the entire table elevated 30 degrees, head end up. This pockets the lipiodol under the lumbosacral area.

By simple syringe suction the lipiodol is then slowly removed. A certain amount of spinal fluid accompanies the oil, but by gently manipulating the needle so that only the oily mass is contacted, it is not necessary to withdraw a large amount of the fluid.

When one has obtained all the oil possible, a roentgenogram of the area is taken, leaving the needle in place. Any significant amount of remaining oil can be localized and removed. The film will indicate any change necessary in the inclination of the patient to complete withdrawal of the oil. The entire procedure is best carried out on a tilting roentgen table. The patient is given routine care, similar to that following an ordinary lumbar puncture.

It is highly important that the roentgen studies and removal of lipiodol be carried out promptly. The longer the oil remains within the canal, the more it emulsifies into droplets, making its removal by needle more difficult. Removal within two hours is the optimum time.

THOROTRAST

Diveley's technic of transspinal irrigation with Ringer solution is employed for removal of thorotrast from the spinal canal. Briefly, the method consists of spinal puncture with removal of eight to twelve cubic centimeters of spinal fluid and insertion of a similar amount of warmed, sterile thorotrast. After studies are completed, two needles are inserted into the subarachnoid space, one in the upper lumbar area (for intervertebral disc) and one at the lumbosacral junction. Seventy-five to one hundred cubic centimeters of sterile, warm Ringer's solution are then carefully passed through the upper needle, washing out the thorotrast through the lower needle. Since the drug is an aqueous preparation, it can be washed out with the spinal fluid, a technic not possible with the oily preparations. Because it is less satisfactory than lipiodol for contrast and diagnosis, we prefer not to use thorotrast for myelography.

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[3] Taylor, J. O.: New Technic for Lumbosacral Puncture. Staff Proced. Hosp. for Special Surg., 1941.

Figures 1-5 illustrate results obtained in needle removal of each of the two agents discussed.

Any consideration of this subject would be incomplete without mention of myelography, using air, oxygen or other gasses. Air myelography has been used in many clinics throughout this country, some men reporting favorable results. We have personally reviewed more than fifty cases of suspected herniation of intervertebral disc, using air as a contrast medium. Operative exploration was carried out in a number of these cases. Conflicting findings were not uncommon. We do not use air or oxygen for myelography and feel that contrast is not sufficient to afford positive diagnosis.

CONCLUSIONS

Diveley's and other technics are discussed for the nonoperative removal of lipiodol and thorotrast from the spinal canal.

Immediate nonoperative removal of these agents, following diagnosis, greatly increases their scope of usefulness in identifying lesions of the spinal canal and its contents.

TREATMENT OF INFANTILE CEREBRAL PALSY*

Earl R. Carlson, M.D.
NEW YORK CITY

Infantile cerebral palsy, or spastic paralysis, is a disturbance of motor function which is as prevalent as infantile paralysis. There are no accurate reports as to how many spastics there are in this country but it is estimated there are between forty and fifty thousand below the age of twenty-one years, and if those above that age are included, they would probably total 150,000. Besides the obvious motor handicaps, speech disorders, hearing, reading, writing and visual difficulties are a frequent accompaniment and make the educational program more difficult than that which confronts the child with a single handicap.

There are schools for crippled children, for the child handicapped by poliomyelitis. There are schools for the child who is deaf. But the spastic, who is both deaf and crippled, is not accepted in schools for the crippled because of the hearing defect and is not admitted to schools for the hard of hearing because of the crippling condition. The result is that infantile cerebral palsy has become recognized as the most neglected of all crippling conditions in childhood. There are adequate facilities in most of our larger cities for treatment of such conditions but, since training usually requires a period of years to be effective, the child's education when he is undergoing treatment is for the most part neglected. It is, therefore, the purpose of this paper to emphasize the importance of establishing schools, where treatment and special education can be given simultaneously.

Infantile cerebral palsy can be caused by anything that destroys or damages brain tissue either before, during or after the delivery of the infant. There may be a faulty embryonic development, such as failure of part of the brain, even though present, to attain its proper growth. Just as a person may be born with a club foot, so he may be born with a brain defect and still not suffer any greater mental consequences than the man with the club foot. A blood vessel may rupture during the delivery of the infant and destroy the main motor pathways of the brain. Infection, toxic conditions of the newborn and other factors too numerous to mention here may give rise to infantile cerebral palsy. The effects produced depend upon the extent and location of the damage. If the cortex fails to develop or there has been extensive extravasation of blood into the substance of the brain, intellectual growth will have been too seriously interfered with to expect any help from treatment. When the disturbance is progressive, the prognosis is likewise poor. Obviously, if training is to be effective, there must be an undamaged brain residue with which to work.

Almost any conceivable type or combination of types of muscular dysfunction may occur. Spasticity, athetosis and ataxia are the principal disorders encountered. Chorea and intention tremor are not uncommon. Occasionally, convulsions occur and are present in the majority of hemiplegic cases.

The type of treatment required depends upon which type of muscular disorder is predominant, for treatment of athetosis is quite different from that of spasticity or ataxia. The physical improvement that is possible through exercise for the cerebral palsied person depends upon growth factors. Stepping movements show themselves almost immediately upon birth, but no amount of exercises is going to enable the normal infant to walk until his nervous system has attained sufficient growth, which usually occurs at the age of one year. In one cerebral palsied child the structural development of the brain may be arrested as far as motor abilities are concerned, and repetition of a physical act will result in no improvement, while in another there may be unlimited possibilities of developing muscular control.

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*From Neurological Institute, New York City.

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Note: Parts of this paper have been taken from the author's book, "Born That Way," published by John Day & Co., New York, 1941.

It is very difficult to lay down or prescribe any one set of rules for specific types of exercises. For proper relaxation a calm and quiet atmosphere is very necessary. The exercises must be adapted to the individual case and depend largely on the clinical findings. The chief aim of the exercises is to teach the patient to make each active movement with a minimum of muscular effort. The teacher should be a person with temperament and personality that is conducive to relaxation. Before the exercises are started there should be a preliminary relaxation period. Then exercises should be carried out with the least amount of motor overflow, with just as little effort as it takes to perform a free and easy movement. The first exercises should be the slow, coordinated, rhythmic forms of movements, beginning with the major groups of muscles, such as those about the proximal joints, shoulder and hip, later including the muscles of the knees and elbows, and finally those of the hands and feet.

In the younger children it is often necessary passively to assist them until they are able to carry out the movements by themselves. As a rule, it is better at first to allow the child to do exercises as best he can, in spite of the fact that he is making erroneous and unessential movements in the first attempts. Later the incorrect movements may be gradually eliminated. Such a course is better than to restrict activity to simpler movements with the expectation that the ability so gained will be immediately carried over into the more complicated coordinated acts.

In spastic conditions flexor muscles are usually more powerful than the extensors, and thigh muscles which bring the legs together are stronger than the opposing groups. This is why the legs become crossed on each other, when the spastic attempts to walk. When the spastic flexes a limb, there is usually a powerful simultaneous contraction of both extensors and flexors, and the limb becomes rigid. Treatment attempts to overcome this condition by teaching the patient to relax one set of muscles as the opposing muscle group is brought into action.

The child with the scissors gait, for instance, is taught to spread his legs apart after he has relaxed the muscles that keep them crossed. This is usually done while he is on the treatment table or in the pool. The child spreads his legs apart with as little assistance from the physiotherapist as possible, who then brings them together when the child relaxes. The physiotherapist must not be discouraged; it often requires a long time before the child learns to relax individual muscle groups satisfactorily. If it is necessary to stretch a tight muscle group, it should be done gently and when the patient is relaxed, to avoid any muscle spasm. The application of heat and gentle massage is sometimes helpful for producing relaxation. Stimulating massage is contraindicated because it increases muscle tension.

In ataxic conditions there is a lack of balanced action between opposing muscle groups, with consequent clumsiness of movement. There is slurring of speech, tremor and the gait is rolling or staggering, like that of a drunken man. This unsteadiness can often be overcome when somebody lends only slight assistance, like placing the hand lightly on the arm as the patient makes a movement. An ataxic, who could not walk by himself, required only slight support of a trainer to walk normally. Since the cortex plays the most important part in voluntary movement, it can be trained to compensate in large measure for defects in the brain that gives rise to ataxia. Such training places a great deal of reliance on vision. The ataxic must look where he walks or focus on the object he is attempting to reach.

Athetosis, or "mobile spasm," is characterized by its plastic rather than its spastic type of rigidity, that is, it has no spring to it. It is a stiffness like that of very dense putty. The limbs assume bizarre shapes. Facial grimaces are common, resembling caricatures of normal facial expressions or the strain seen on the face of the sprint runner or the pole vaulter as he nears the goal. Since the athetoid has better control of his muscular movements, when the factors of fear, anxiety and self-consciousness are in abeyance, his training is more of an emotional and educational problem than a physical one.

The public speaker and the athetoid have much in common. Both are helped by exercises that teach relaxation, but such measures are useless to the public speaker in overcoming stage fright, if he has forgotten what he is to say, and are equally ineffective in helping the athetoid, if he is unable to forget himself in his work or play. Treatments should, therefore, be directed toward keeping the athetoid occupied and at the same time keeping his mind off his muscles. This can be done by directing his attention to the purpose of the act rather than to the muscles which perform it.

The principle of working from the larger to the smaller muscle groups is not as applicable in athetoid as in spastic conditions, since there are athetoids who are often able to do intricate acts, such as playing the piano, driving a car and playing golf, and have great difficulty with simple acts like feeding themselves. The athetoid must avoid too many sensory stimuli to which his nervous system has not yet been accustomed. Sometimes it is possible to shut out the irrelevant stimuli by shading the eyes in much the same way as blinders are used on a horse.

In one such case an athetoid was given blocks to pile on a table. He placed the first block on the table with only slight athetosis. Placing the second one on the first involved an increased amount of overflow activity, which was further augmented when the third was placed on the second. The fourth could not be placed at all, and the whole pile was knocked down. The process was repeated several times with similar results. Then the patient was equipped with pin-point blinders, such as are used in the treatment of cataract, which cut down his vision on the blocks and a small part of the table. He was then able to place the blocks on top of one another more successfully and with less overflow activity.

Visual training is important for all types of conditions encountered in cerebral palsy. The cerebral palsied child has difficulty in correlating muscular activity and perception. He tries to look in too many directions at once. In shaking hands, he thrusts his hand out aimlessly. If before shaking hands, he is asked to look sharply at the thumb of the hand he is trying to reach, he will have no difficulty. Speech is likewise improved, when the child focuses his eyes at a certain point in speaking. This is one of the reasons why lip reading is valuable in helping the general type of speech difficulty present in cerebral palsy cases. If the person has to read lips, he will obviously have to look at the one whose lips he is reading, and in so doing he cuts down his vision with a consequent decrease in adventitious muscular activity.

Use of the microphone and loud speaker is likewise helpful in speech training. In talking, the child is likely to put out more energy than he can control, with the result that his speech becomes indistinct. With the use of a microphone he is able to speak above a whisper and make himself understood with the least amount of effort, the result being that he speaks more clearly with its use than under ordinary circumstances. The "mirrophone," a recent invention that reflects the voice and enables the athetoid to hear the words he has spoken, is valuable in teaching correct enunciation.

Speech, nevertheless, is a very intricate muscular process and its disturbance is closely linked with the general disability, so that one cannot hope for much progress until the patient has acquired general improvement. Not infrequently speech or its acquisition occurs with the successful accomplishment of coordinated muscular movement without special emphasis being placed on speech training itself.

Surgery often helps along a program of muscle training and is more effective in spastic than in athetoid conditions. Lengthening the heel cord, arthrodesis, tendon transplantation, obturator neurectomy, neurectomy of the nerves to the gastrocnemius muscle are helpful, when these procedures are followed up by a thorough program of exercises.

On the whole, little is accomplished for the athetoid by peripheral operations on nerves and muscles. Posterior root section and operations of the Stoeffel type are definitely contraindicative. Stabilization of the ankle or tenotomy of the Achilles tendon, when much athetosis is present, is not often helpful. Use of braces and splints is likewise more helpful in spastic conditions. Except in mild cases of athetosis they usually aggravate the condition. If a brace could be invented that would have a give to it and yet be supporting, it would be of great value to the athetoid. Wrapping an Ace bandage around the limb controls the writhing movement. In severe cases of athetosis involving one arm, resection of the anterior portion of the corresponding motor cortex has been successful in some cases. Section of the extrapyramidal pathways in the spine has yielded favorable results in some of the most distressing cases of athetosis.

Drug therapy in cerebral palsy conditions has been entirely unsuccessful. Sedatives, such as phenobarbital and bromides, should not be used except in convulsive disorders and then dilantin is the drug of choice, since it diminishes the attacks without giving rise to drowsiness as other sedatives do. Any drug which tends to depress the mental activity makes the patient less responsive to treatment, and a cup of coffee will often do more good than a sedative. Doses of hyoscin large enough to control muscle spasm also produce confusion. Snake venom, bee venom and curare produce partial relief of muscular tension for a short time but seem to have no permanent effect and are highly toxic. In some cases alcohol has an effect in controlling athetosis and spasticity. A man who was unable to bring a full glass of water to his lips without spilling the contents had no difficulty whatsoever after consuming two ounces of whiskey. The effects of ether anesthesia following surgical operations are interesting. A child with a severe dysarthria, who could scarcely utter an intelligible sound, talked clearly while she was recovering from the effects of the ether. As the ether wore off, the child's words became less and less distinct and finally the speech became as dysarthric as before the operation.

In the above, we have briefly considered the effects of physical therapy, surgery and drugs in treatment of cerebral palsy. The effect of education is even more important. The traditional view is that the cerebral palsied cannot develop mentally beyond the limits of his motor experience, since he has to translate ideas into muscular activity to grasp them, and, therefore, the first object in treating this patient is to educate his muscles until some control has been obtained.

The question of academic training is often put off until this goal has been attained, or is neglected entirely. But it can be demonstrated that the mental growth brought about through education is the most important factor in amelioration of the cerebral palsied individual. By education I mean the attempt to direct development into beneficial channels by means of proper stimuli. Such education does not differ from the basic principles applied in teaching the normal.

Movements of a normal infant are also incoordinated and occur more or less at random. At birth the brain is unable to select the relevant impulses from among the sensory impressions which bombard the nervous system, and translate them into purposeful action. Until this selective capacity develops with the growth of the cortex, the baby grimaces and exhibits varying degrees of muscular rigidity suggestive of mild spastic and athetoid conditions. His motions are without purpose. As the cortex develops and concentration on a purpose is achieved, these aimless movements cease. Certain structural and chemical elements in the brain grow as use is made of them. This structural growth of the brain is most rapid at the time when walking and talking occur.

As walking becomes a habit, we see another stage in the child's development, where he is continually on the go, picking up his toys and pushing them about, going from one to another, keeping his watchful mother on the alert, but invariably giving no particular object his attention. However, as he develops an interest in things and one object holds his attention more than another, we see a corresponding decrease in disorganized body activity. Similarly, in the case of the cerebral palsied child, we see fewer purposeless movements occurring when there is something that holds the child's attention. In other words, with the growth of intelligence and achievement of ability to concentrate, aimless movements become more purposeful. Education, therefore, is even more important for the cerebral palsied than for the normal child; by education it is possible to develop the unaffected centers of the brain, and a corresponding improvement of the damaged controls can be effected.

The importance of concentration is evident in the ability of the spastic-athetoid to use his hands better in the evening than in the morning. Frequently we will find a child who is unable to feed himself at breakfast, who finds no difficulty with the evening meal. His power of concentration, even after a good night's sleep, is poor in the morning and is reflected in purposeless muscular activity which lessens as the child becomes interested in his surroundings.

The value of an academic program cannot, therefore, be overemphasized. Parents who delay academic training until the child acquires better control of his hands or speech are surprised at the rapid improvement which follows when he is placed in school. Since the factors of fear, anxiety, and self-consciousness play a great part in enabling the cerebral palsied to control his motions, the effect that education has on the emotions is likewise important. The muscular disturbances of the cerebral palsied are, in fact, so intimately tied up with the emotional processes that it is as difficult to conceive of the disturbance as being something separate from the feelings as it is to think of laughter as being something apart from the emotions which evoked it.

The answer to the problem of the cerebral palsied lies in education. But real education implies real hard work and perseverance. It is the tendency of the cerebral palsied to depart from the path of least resistance that has made his progress so slow. It is not the teacher or the trainer that counts, but the efforts made by the cerebral palsied. All that the teacher can do is to stimulate him and by choice of appropriate stimuli seek to bring forth the desired response. Such responses, oft repeated, become habits. Of course, the unimpaired portions of the brain fix the limits within which responses can be made, but within those limits a vast variety of responses are usually possible, and when such responses become habits they largely determine the physical progress, character and personality of the cerebral palsied individual.

ROENTGENOTHERAPY OF SPONDYLITIS ADOLESCENS

Sherman E. Rees, M.D.*
and
Woodrow Murphy, M.D.**
PORTLAND, ORE.

TERMINOLOGY

Scott[1] has advanced the theory that spondylitis adolescens is an inflammatory arthritis of the spine of infective origin, and attacks the young adult, in contradistinction to spondylitis osteoarthritica which is a degenerative disease that attacks the older individual and is characterized by osteophytes attached to the edges of the vertebral bodies. Persons who are afflicted with the latter disease always have normal sacroiliac joints, while persons who suffer from the former disease always have pathologic sacroiliac joints. Marie-Strümpell syndrome, Bechterew's spondylitis, and spondylose rhizomelique may be classified under the term spondylitis adolescens as it will be pointed out later.

FREQUENCY

Scott encountered nearly two hundred cases of spondylitis adolescens during a period of five years, while serving at the British Red Cross Clinic for Rheumatism. In our own experience, we have had from one to four cases under treatment all the time during the past six months, in addition to several cases which were treated previously which includes the cases reported in this paper. Thus, it can be stated that the disease is common rather than a rarity as it was formerly considered.

PATHOLOGY

From the radiologic-pathologic standpoint, the disease is very interesting. That the disease is of infective origin is indicated by the sedimentation rate which is always increased, and by the radiographic appearance of the sacroiliac joints. The primary source of infection has not been determined, but inasmuch as both sacroiliac joints always show pathology at the time spinal symptoms develop, they must be given serious consideration as the site of the primary infection. However, no microbe has yet been proven to be the etiologic agent from efforts to culture an organism from the sacroiliac joints. Blair[2] published a paper recently, in which he discussed the disease from the metabolic standpoint. He pointed out that the etiology may be on the basis of the sulphur metabolism of the body.

From the radiologic standpoint sacroiliitis shows itself early (prespondylitic, age 16 to 20) as broadening of the fissues of the sacroiliac joints, fuzziness of outline and loss of definition of the joints. There may be cavitation, giving a nodular effect to the joint. Later (age 18 to 25) the anterior and posterior fissures are obliterated and cavities varying in size replace them. There may also be some degree of sclerosis of the surrounding bone at this time. These changes are always bilateral. Changes in the joints progress until there is complete fusion of the ilium and sacrum.

RADIOLOGY

Radiographically the spondylitis shows itself as a calcification of the particular tissues, ligaments and soft tissues closely related to the spine. The process does not spread to other soft tissues of the body. This process can usually be detected first on the outer surface of the intervertebral discs. In extreme cases the vertebral joints fuse and the spinal column becomes a solid pillar of bone. The whole process may be shown in many stages radiographically. In some cases the vertebral bodies show decalcification but, unlike rheumatoid arthritis, decalcification does not occur in other bones, indicating that it is confined to the spine when it does occur.

SYMPTOMS

Early clinical symptoms (prespondylitic period) consist of rheumatic pains of a wandering character. These may be of sufficient severity to restrict the activity of the patient temporarily. They occur usually between the ages of twelve and eighteen and are intermittent in character. As the onset of spondylitis is approached severe pain may be referred to the hip joints, which may lead to an incorrect diagnosis of tuberculosis of the hip. Therefore radiographs taken at this time should always include the sacroiliac joints.

During this early period the patient need not refer to the sacroiliac joints as the position of his pain. As spondylitis develops, there is pain and stiffness of the spine in varying degrees. Marie and Strümbell described the type in which the lumbar spine is attacked first. In this type the natural lumbar curve is lost and this section of the spine is kept rigid. The patient walks with the legs well apart. The upper vertebrae remain free until quite a later stage. Bechterew's type is that in which the symptoms first develop in the cervical and dorsal vertebrae. In the latter type the patient walks nor-

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*Radiologist; **Resident, St. Vincent's Hospital.

[1] Scott, S. G.: Spondylitis Adolescens with Associated Pathological Changes in Sacroiliac Joints. Charterhouse Rheumat. Clin. Orig. Papers, 1:169-203, 1937.

[2] Blair, H. C.: Spondylitis Adolescens — Strümpell-Marie Disease. Practical and Theoretical Considerations. Surg., Gynec. & Obst., 74:663-670. March, 1942.

mally, but there is a definite kyposis of the upper spine. The head is held in position tilted forward and to one side. The later stage of the disease is a combination of the two types mentioned.

During the acute stages the general health of the patient suffers considerably; there may be rise in temperature; iritis and herpes zoster may develop. The spinous processes are tender, a symptom which may also be present in other bony prominences. A further stage which is rare occurs, in which there is involvement of the hip and shoulder joints. Ankylosis readily takes place in these joints.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis early in the disease should include tuberculosis of the sacroiliac joint, the main points of which are given in the following: Prespondylitic sacroiliitis is always bilateral, and never goes to abscess formation. The final change is ankylosis of these joints. There is no pain over the joints after ankylosis develops. Tuberculosis of the sacroiliac joints is usually unilateral, tends to abscess formation, and the patient complains of severe pain over involved joint from the start; spondylitis does not develop subsequently to a tuberculous process in the sacroiliac joints. The involved joint may fuse when the tuberculous process becomes quiescent. The history is long in the prespondylitic type of sacroiliitis and short in the tuberculous type.

In the later stages of spondylitis, osteoarthritis must be considered in the diagnosis. The differential points involving the latter process have been given. The main differential point concerning atrophic arthritis is that the latter involves other bones beside the spine.

ROENTGENOTHERAPY

Scott points out that there are two main methods of applying roentgen radiation: (1) local application as to a malignancy, where the area covered is small and wave lengths of a short range are used; and (2) general application, such as in leukemia, where the area covered is large and the wave lengths used are in the medium range. In the first method the effect is obtained on the lesion, while in the second there is a constitutional effect. Constitutional effects of roentgen radiation are demonstrated by nausea which may be followed by diarrhea and severe collapse, and blood changes, that is, leukopenia. The latter effect is well demonstrated by reduction of the white count by means of the roentgen bath in leukemia.

It is not our purpose to go into the theory of constitutional effects of roentgenism, by which a favorable influence is exerted in spondylitis adolescens. This aspect of the roentgenotherapy has been taken up in the paper by Blair.

The technics of application of radiation in this disease is very important. It is desired to obtain absorption of the radiation in amount which does not cause untoward symptoms. For this purpose aluminum filtration is used, the voltage not exceeding 140 kv and the total dose given in one treatment does not exceed 100 r. Experience has shown that the desired effects may be obtained by spacing treatments so that two are given weekly, the total course consisting of sixteen treatments given over a period of eight weeks. It may be pointed out that disastrous results will be obtained, if penetrating rays are used in heavy dosages over the spine.

Our method of application involves the factors of two mm. of aluminum of added filtration with a half value layer of five mm., distance of 50 cm., 140 kv, 15 ma., and effective wave length of .300 angstrom. This gives an output of 34 r per minute. The radiation is given for one minute to each of two areas covered. The master cone of the machine is used. The two areas are treated over the back with the patient lying on his abdomen. One area covered is the lumbosacral, the central ray being directed so that it is perpendicular to the center of the lumbosacral curve. The tube is then shifted to cover the second area which is over the dorsal vertebrae, the central ray being directed in this instance to the center of the dorsal curve. The two fields are not allowed to overlap. Thus the patient receives a total dose of 68 r at each treatment. Treatments are given on Tuesdays and Fridays of each week which gives a space of two and three days between each day of treatment. The full course is shown in the accompanying table 1. The full or partial course may be repeated after a few weeks interval, depending on the clinical condition and response of the patient.

Following are brief summaries of the amount of treatment and clinical response of a few of the patients we have treated. All of these cases were diagnosed by outstanding and reliable specialists in orthopedics and referred for roentgenotherapy.

CASE REPORTS

Case 1. Male, age 18. Films of this patient showed evidence of destruction in both hip joints and sacroiliacs. He received three series of therapy within the following dates: first series, sixteen treatments, from March 14 to May 16, 1939; second series, eight treatments, from July 14 to August 8; third series, sixteen treatments, from October 24 to December 15. Subjective improvement as to pain occurred with each series and there was less rigidity of the spine with

Date	Target-skin distance (in cm.)	Added filters (in mm.)	Kv. P.	Half value layer (in mm. of cu.)	Effective wave length	Ma.	r per minute	Time (in min.)	r to field	Total r to the field	Size of field (in cm.)	Location of field
9- 8-41	50	2 al	140	5 al	.300 A	15	34	1	34	34	M.C.	Lumbar & Dorsal
9-11-41	50	2 al	140	5 al	.300 A	15	34	1	34	68	M.C.	Lumbar & Dorsal
9-16-41	50	2 al	140	5 al	.300 A	15	34	1	34	102	M.C.	Lumbar & Dorsal
9-19-41	50	2 al	140	5 al	.300 A	15	34	1	34	136	M.C.	Lumbar & Dorsal
9-23-41	50	2 al	140	5 al	.300 A	15	34	1	34	170	M.C.	Lumbar & Dorsal
9-27-41	50	2 al	140	5 al	.300 A	15	34	1	34	204	M.C.	Lumbar & Dorsal
9-30-41	50	2 al	140	5 al	.300 A	15	34	1	34	238	M.C.	Lumbar & Dorsal
10- 3-41	50	2 al	140	5 al	.300 A	15	34	1	34	272	M.C.	Lumbar & Dorsal
10- 7-41	50	2 al	140	5 al	.300 A	15	34	1	34	306	M.C.	Lumbar & Dorsal
10-10-41	50	2 al	140	5 al	.300 A	15	34	1	34	340	M.C.	Lumbar & Dorsal
10-14-41	50	2 al	140	5 al	.300 A	15	34	1	34	374	M.C.	Lumbar & Dorsal
10-17-41	50	2 al	140	5 al	.300 A	15	34	1	34	408	M.C.	Lumbar & Dorsal
10-21-41	50	2 al	140	5 al	.300 A	15	34	1	34	442	M.C.	Lumbar & Dorsal
10-24-41	50	2 al	140	5 al	.300 A	15	34	1	34	476	M.C.	Lumbar & Dorsal
10-28-41	50	2 al	140	5 al	.300 A	15	34	1	34	510	M.C.	Lumbar & Dorsal
10-31-41	50	2 al	140	5 al	.300 A	15	34	1	34	544	M.C.	Lumbar & Dorsal
									Total	1088R		

Table 1.

improved motion after each series. The last progress note under the date of January 18, 1940, states the patient had gained twenty pounds. Roentgenograms taken at this time showed both hips having a more normal appearance.

Case 2. Male, age 23. This patient received one series of sixteen treatments from April 25 to June 16, 1939. There was much improvement subjectively and less rigidity of the spine with increase of motion following therapy. He returned to work on June 23. The last progress note on December 26, 1940, states the patient had maintained his improvement except for some pain caused by a slight strain injury to the back.

Case 3. Male, age 24. This patient received two series of therapy, the first consisting of fifteen treatments from December 9, 1938, to January 24, 1939. There was no improvement following this course. The second consisted of eleven treatments from February 18 to April 8, 1939. There was subjective improvement with less rigidity of the spine after the second course. A progress note under date of January 25, 1941, states that the patient was playing tennis and swimming. His only complaint was an occasional twinge of pain. The last progress note under date of June 10, 1941, states he was working steadily and had no complaints.

Case 4. Male, age 34. This patient had previously had an arthroplasty to the right hip. The spine was almost completely fused. He received three series of treatments. The first consisted of sixteen treatments from June 20 to August 11, 1939; the second consisted of sixteen treatments from October 10 to December 1, 1939; the third consisted of three treatments from March 18 to March 22, 1940. There was no improvement in any respect either during or following the series of treatments.

Case 5. Male, age 16. Films on this patient showed only slight changes in the sacroiliac joints. He was given one course of therapy, consisting of sixteen treatments from June 10 to August 20, 1940. There was subjective improvement and increase in motion of the spine during the course of therapy. A progress note under date of December 11, 1940, states that the patient had gained fourteen pounds. The last progress note under date of November 21, 1941, states he had no complaints and had played football during the regular season.

Case 6. Female, age 24. This patient received a series of sixteen treatments from January 30 to April 16, 1940. She received her treatments irregularly. At the time of the last treatment there was no improvement. The last progress note under date of May 30, 1940, states the patient reported definite improvement.

Case 7. Male, age 28. Films on this patient showed a complete fusion of left hip and both sacroiliac joints; right hip was almost completely fused. This patient received a series consisting of sixteen treatments from December 14, 1938, to February 4, 1939; and a second series consisting of four treatments from February 25 to March 10, 1939. He reported definite subjective improvements as to pain but no improvement in motion.

CONCLUSIONS

It may be stated that the earlier the patient is treated in the course of his disease, the better will be the result obtained with roentgenotherapy, particularly if the patient can be treated in the prespondylitic period.

We have found that the patients do better under treatment and better results are obtained, if they do not have to travel far to receive treatment because of the additional trauma caused by their having to move about. This is particularly true in those patients who have partial fusion of the spine or other joints. It is perhaps best to have that type of patient in the hospital while undergoing treatment.

Results are much better if the treatments are taken regularly. This can be observed by the response while the patient is undergoing treatment as well as in the end-result.

HISTOPATHOLOGIC CHANGES OF BRAIN ACCOMPANYING DELAYED DEATH FOLLOWING ASPHYXIATION*

William B. Dublin, M.D.
and
Robert W. Brown, M.D.
FORT STEILACOOM, WASH.

Few cases of delayed death following asphyxia by strangulation have been reported. Among these is that of Döring[1], in which death occurred ninety-six hours following strangulation. Ischemic necrosis of nerve cells was distributed widely through the cortex, involved the Purkinje cells of the cerebellum, and was particularly severe in the lenticular nuclei. Döring cited four other cases[2,3] in which similar lesions were found.

Helwig[4] reported a case of death in convulsions three hours following asphyxia from postoperative, peritracheal hemorrhage. Diffuse degeneration of cortical cells (swelling, chromatolysis, and so forth) was observed. In the frontal region, especially the cells of layers V and VI were found to have undergone ischemic shrinkage. A few cortical cells were stained a diffuse, uniform, pale blue color which appeared to represent an early stage of ischemic degeneration. Methods of staining with silver revealed argentophilia of occasional nuclei, sometimes with coalescence and fragmentation of the neurofibrils of the cell body. The globus pallidus appeared normal.

In a case of delayed death following hanging Scholz[5] found ischemic degeneration of the cortical ganglion cells and of the Purkinje cells of the cerebellum; similar changes were observed by Westmann and Hallervorden[6] in the brains of three individuals dying from pulmonary embolism (embolectomy was performed in each case, and was survived for a varying number of hours). In a case of death three months following hanging, Deutsch[7] found symmetrical softening of the corpus striatum and lenticular nucleus without alteration of the cortex or thalamus.

It is apparent that there is some difference of opinion concerning the severity and distribution of histopathologic lesions of the brain following temporary arrest of the circulation. A fairly clear picture, however, may be gained by superimposing the various descriptions.

Gildea and Cobb[8], Weinberger, Gibbon and Gibbon[9] and others have approached the subject experimentally by ligating the cerebral arteries of cats. Ischemic necrosis of the cortical cells, especially of layers III and IV, of the Purkinje cells of the cerebellum, and of the basal nuclei have been described.

Of interest is a case of symmetric necrosis of the globus pallidus found by De Groat[10] in a woman dying after five days of coma, following suspected poisoning with a barbiturate. Degeneration of ganglion cells was found throughout the brain. Attention was drawn to the probable lack of specific toxicity of carbon monoxide for the basal ganglia, and to a possible gradient of vulnerability of various centers of the brain to anoxia from any cause.

Courville[11], in a monograph on histopathologic changes of the brain following anoxia in nitrous oxide anesthesia, found essentially the same lesions as those produced by asphyxia from other causes. The duration of life following anoxia was found to affect the histologic picture. For example, in one case of survival for twenty-six days, calcific deposits were found. Degeneration of individual nerve cells was extensive throughout the cerebral cortex. Patchy necrosis was found, as well as a zonal type of degeneration, in which the cortical parenchyma became marked out into layers or bands by the degenerative process. Occasionally nerve fibers were swollen or fibrillated. There was a varying degree of hypertrophy of microglia; degeneration of astrocytes and acute swelling of oligodendroglia also were seen. As a late manifestation, vascular proliferations were seen in areas destined to become scars. The lenticular nuclei and cortex appeared to be equally involved. The Purkinje cells of the cerebellum were frequently injured. The lesions varied in the thirteen cases reported.

Postmortem examination was made recently at Western State Hospital of an individual who lived for three days following asphyxia by strangulation.

REPORT OF CASE

The patient, a man aged 38 years, was admitted to Western State Hospital October 11, 1940, for treatment of psychosis associated with chronic alcoholism. Results of physical examination were essentially negative.

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*From Western State Hospital.

*Read before a Meeting of North Pacific Society of Neurology and Psychitry, Portland, Ore., May 9, 1942.

[1] Döring, G.: Zur Histopathologie des Gehirnes bei Spättod nach Erhängen und nach Carotisunterbindung. Virchow's Archiv. fur path. Anat. und Physiol., 296:666-680, 1935-36.

[2] Müller, G.: Quoted by Döring.

[3] Bingel, A. and Hempel, E.: Quoted by Döring.

[4] Helwig, F. C.: Histopathologic Studies of the Brain in Delayed Death Following Strangulation. South. Med. Jour., 30:531-535 (May), 1937.

[5] Scholz, W.: Quoted by Helwig.

[6] Westmann, O. and Hallervorden, J.: Quoted by Helwig.

[7] Deutsch, J.: Quoted by Helwig.

[8] Gildea, E. F., and Cobb, S. F.: Effects of Anemia on Cerebral Cortex of Cat. Arch. Neur. and Psychiat., 28: 876-903, 1930.

[9] Weinberger, L. M., Gibbon, M. and Gibbon, J. H.: Temporary Arrest of Circulation of Central Nervous System. Arch. Neur. and Psychiat., 43:961-986, May, 1940.

[10] De Groat, A.: Symmetric Necrosis of Globus Pallidus in Barbiturate Poisoning. Arch. Path., 29:271, Feb., 1940.

[11] Courville, C. B.: Asphyxia as Consequence of Nitrous Oxide Anesthesia. Medicine, 15:129-245, 1936.

December 23, the patient succeeded in suspending himself by the neck with his necktie. The exact duration of the suspension was not known, although it was estimated at five minutes. Respirations had ceased but the radial pulsations could be felt. One cc. of coramine was given intravenously and artificial respiration was administered. When the respirations returned, they were rapid and labored. At this time all extremities were held in rigid extension.

Six hours later the rectal temperature was 104° F., and there were coarse rales over both lungs. The patient was still in a state of coma. He resisted examination of the eyes by rolling them upward. The right pupil was larger than the left, but they responded to light. The optic discs were normal. The retinal veins were dark, but no retinal hemorrhage was seen. There was no stiffness or palpable deformity of the neck. The arms showed slight resistance to passive motion; the forearms and hands were flaillike. The lower extremities were held in a position of extension and any flexion was resisted. Forcible flexion of the toes did not result in withdrawal of the leg. Deep reflexes of the extremities were not obtained. There was no ankle clonus. The cerebrospinal fluid was under a pressure of 192 mm. Sixteen cc. of clear fluid were withdrawn, and a final pressure of 72 mm. was obtained. The cell count was 3 lymphocytes per cubic mm., the reaction to Pandy's test for globulin was negative, and the total protein content was 15 mg. per cent. Reactions to Kolmer and Kahn tests were negative, and the colloidal gold curve was 0000000000.

On the second day, the rectal temperature fell to 101.4° F., and there was a slight decrease in rigidity of the extremities. The initial fever was considered to have been central in origin. On the third day, there was a secondary rise in temperature, probably pulmonary in origin, accompanied by tachycardia of 175 per minute. At this time the arms were entirely flaccid. On the fourth day, there was rigidity of the distal portions of the lower extremities, but the knees could be moved without resistance; the ankles, however, could not be flexed completely. No hemorrhages had developed in the optic fundi.

Exodus occurred eighty hours following asphyxia. The clinical diagnosis was lenticular degeneration, secondary to anoxia, with probable diffuse damage throughout the brain.

POSTMORTEM

Postmortem examination, performed one and one-quarter hours after death, resulted in the following significant findings: There is superficial abrasion about the neck at level of the thyroid cartilage. There is no edema of extremities. Feet are in firm plantar flexion, arms are flaccid, each pupil measures 5 mm., eyes diverge.

Congestion of vessels is marked throughout the body. (This will not be referred to again in describing the gross and microscopic lesions of individual structures.)

Pericardial sac contains 50 cc. of clear, straw-colored fluid. Heart weighs 310 gm. Right auricle is markedly dilated. On its anterior surface, there is a localized area of bulging 1 cm. in diameter, reaching a height of 0.5 cm., which appears to be herniation of muscle through the visceral pericardium, with thinning of auricular wall at that point.

There is bronchopneumonia, marked on the right, and moderate on the left, with dark red color, loss of crepitation, and increase in consistency, with patches of grey hepatization, especially in right upper lobe.

Neck organs are removed. There is no visible injury or obstruction of larynx or trachea. Palpation of anterior surface of cervical spine shows no bony displacement.

Brain weighs 1480 gm. There is edema, grade two, of piaarachnoid over the vertex. Atherosclerosis of visible arteries is minimal. Convolutions of vertex are mildly flattened. There is no evidence of herniation of base of brain into foramen magnum. Appearance of cut surfaces is suggestive of moderate edema. There is no gross evidence of localized degeneration or infarction of any individual structure.

MICROSCOPIC EXAMINATION

Microscopic examination led to the following significant observations: The point of bulging of cardiac auricular wall consists of simple stretching with thinning.

There is severe bronchopneumonia, with areas of hemorrhage and grey hepatization, and with purulent bronchitis.

Sections of brain are prepared with hematoxylin and eosin, cresyl violet, Bodian, Weigert, osmic acid, Cajal, and Hortega methods.

In the cerebrum, there is widespread damage of cell bodies and of their processes (fig. 1). This appears in the form of swelling, chromatolysis, vacuolation, and especially pyknosis, of ganglion cells. Many giant pyramidal cells of motor area are distorted or fragmented, and stain poorly (fig. 1, A). There is vacuolation of both cortex and white matter which appears to be not only edema but also true porosity (fig. 2). Satellitosis is marked about degenerated nerve cells (fig. 1, B). Necrosis of small vessels is seen frequently. There are a few miliary perivascular areas of necrosis. About many small vessels, single layers of oligodendrocytes and lymphocytes have gathered; none of these cells, however, contain products of lipoid degeneration. Here and there in the white matter, axis cylinders are tortuous, beaded, and fibrillated. This is most marked in the motor area (fig. 3). Also in the white matter, there is some increase in glia, and oligodendrocytes are swollen; however, the glia is affected insignificantly in comparison with the nerve cells.

The aforementioned histologic picture is seen in all cortical areas. The frontal cortex appears moderately, and the motor, parietal and occipital appear markedly, involved. Layers III and IV appear to be affected with relatively great severity. The occipital cortex shows layer-necrosis which exhibits strikingly the cortical laminae; this probably has resulted from the characteristic architecture of the cortical area rather than from any peculiar vulnerability of occipital parenchyma. The hippocampus also is affected; the ganglion cells are severely damaged.

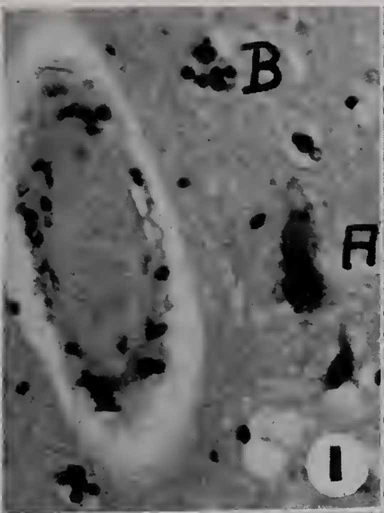
The most severe lesions are observed in the basal nuclei, particularly in globus pallidus. Nerve cells have become dark purple, homogeneous masses (fig. 5). They have lost their neurofibrillary architecture completely (fig. 6, A), and cytoplasm and nucleus cannot be distinguished. Nerve processes stain poorly and are in various stages of beading and fibrillary degeneration. Walls of vessels are markedly degenerated and appear homogeneous (fig. 6, B).

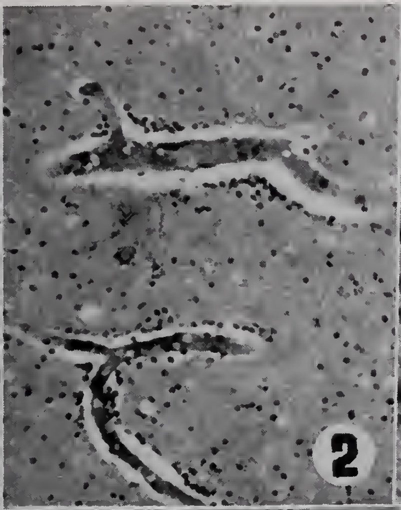
Purkinje cells of cerebellum virtually have disappeared. Cells of dentate nuclei (fig. 4) are severely injured, and present a varied picture of swelling, poor staining and pyknosis. The olivary nuclei are similarly involved to a moderate degree of severity. The remainder of the brain stem is affected mildly to moderately with aforementioned process, without additional striking focal lesion. The spinal cord and peripheral nerves appear essentially normal. The pituitary is mildly, diffusely degenerated.

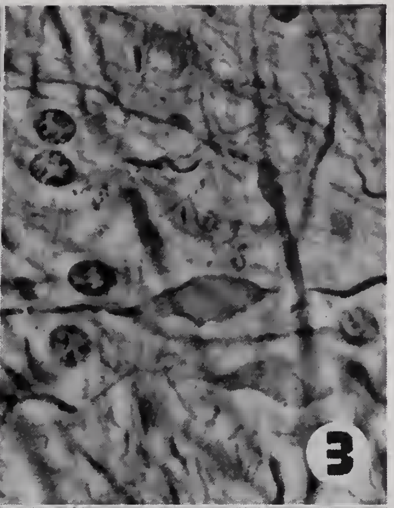
REPORT OF EXPERIMENTAL STUDY

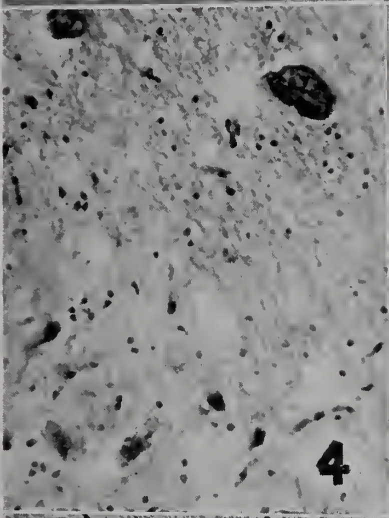
It was thought of interest to reproduce as nearly as possible, in animals, the circumstances of aforementioned case. Using lightly anesthetized rabbits, hanging was simulated by means of circumcervical compression. At the end of two minutes forceful inspiratory efforts were made. After three minutes a clonic, convulsive seizure occurred, lasting about thirty seconds. At four minutes inspiratory efforts ceased. During the next minute the cardiac impulse became increasingly feeble and the pulse grew continually slower and more irregular. After from four and three-quarters to five minutes the animal failed to survive.

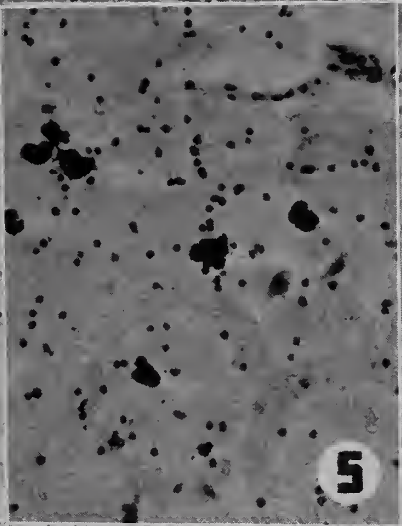
In subjects which failed to survive no significant cerebral

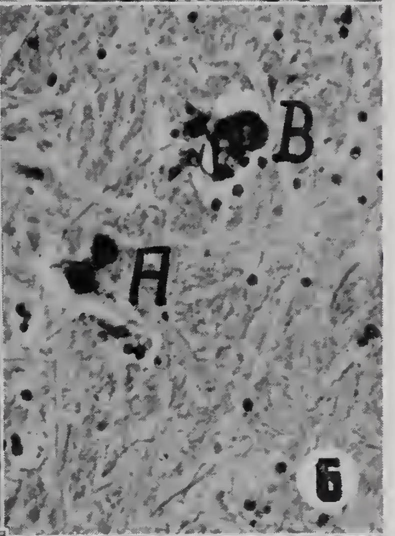


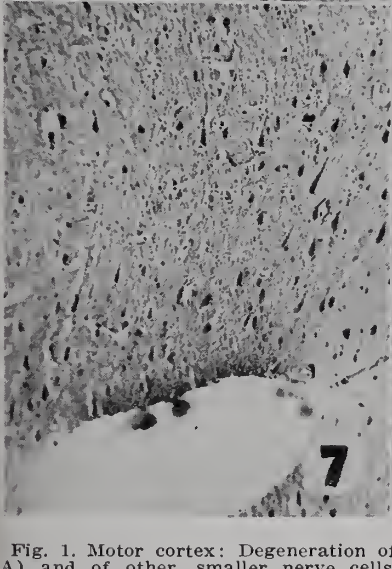


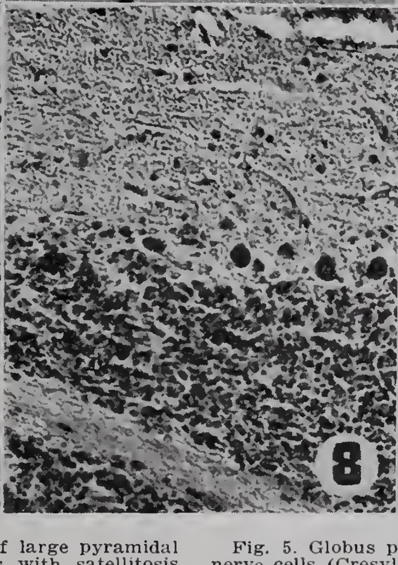












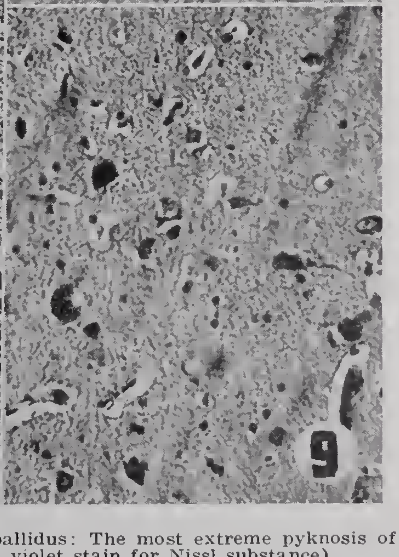


Fig. 1. Motor cortex: Degeneration of large pyramidal (A) and of other, smaller nerve cells with satellitosis (B) (H and E).

Fig. 2. Parietal cortex: Degeneration, with rarefaction; proliferation of glia; perivascular reaction (H and E).

Fig. 3. Motor white matter: Beading, tortuosity and fibrillation of axones (Bodian stain for nerve cells and processes).

Fig. 4. Dentate nucleus: Marked degeneration of nerve cells, with loss of character and rarefaction of the whole tissue (H and E).

Fig. 5. Globus pallidus: The most extreme pyknosis of nerve cells (Cresyl violet stain for Nissl substance).

Fig. 6. Globus pallidus: Complete loss of character of nerve cells (A); mural degeneration of an arteriole (B) (Bodian stain).

Fig. 7. Rabbit: Cerebral cortex; ischemic necrosis (H and E).

Fig. 8. Rabbit: Cerebellum, marked pyknosis of Purkinje cells (H and E).

Fig. 9. Rabbit: Globus pallidus, extreme pyknosis of nerve cells (H and E).

lesions were found, except for congestion of vessels. Those which lived were sacrificed by rapid bleeding at the end of three weeks. At microscopic examination of the surviving group, ischemic necrosis of nerve cells was seen throughout the brain, and degeneration occurred also of nerve fibers, frequently giving, especially the subcortical white matter, a striated appearance. The severity of lesions in various cerebral structures paralleled that seen in the case reported, being moderate in cerebral cortex (fig. 7), dentate nuclei, Purkinje layer of cerebellum (fig. 8) and great in globus pallidus (fig. 9). The degree of severity paralleled roughly the duration of anoxia.

SUMMARY

A case of delayed death following asphyxia from hanging has been presented. Histopathologic changes of the brain consisted of ischemic degeneration of nerve cells and their processes. This was marked throughout the cerebrum. It was most severe in the globus pallidus. The Purkinje cells of cerebellum and to slightly less degree those of the dentate and inferior olivary nuclei also were severely injured. Experiments with animals yielded confirmatory results.

CIRCUMCISION BY LIGATION

Cecil J. Ross, M.D.
PORTLAND, ORE.

Surgeons throughout the nation have taken keen interest in the new and improved technic of circumcision, that of circumcision by ligation. Three years work on more than 1000 patients by the staff of the Portland Sanitarium and other physicians has so perfected the technic that a statement of procedure is in order.

Although quite simple, the new procedure is so different from any hitherto employed that it has called forth scores of inquiries for more details. These divide themselves into two groups: doctors who have not used the method want to know about it, and those who experienced difficulty with their initial trials. Clarification of difficulties for the second group will answer the questions of the first.

Circumcision, an operation performed on more than eighty per cent of male infants born in U. S. hospitals today, has long been one of the "stepchildren of surgery," in that it has suffered from indifference on the part of the surgeon who has always given more attention to the more spectacular operations and their improved technics. This new technic is gratifying to patient and surgeon alike, and, when properly applied, raises a minor operation to the dignity of a major one for that reason.

It is first necessary to grasp the fundamental idea as it occurred to me, which was this: "If a ligature were tied firmly around the prepuce in the same manner as a string is tied around a bag, and allowed to remain there a sufficient length of time, amputation of tissue distal to the ligature would result without use of either knife or scissors; there would be no blood loss, and the resultant circumcision line would be even."

To overcome obvious impossibilities of such a method a ring was made to provide for unobstructed urination. Prevention of slipping of the ligature off the instrument, now commonly known as the Ross ring, was assured by a groove in its outer surface.

A handle, or bail on the ring, which can be held with forceps provides easy adjustment of the ring to the proper position and prevents backward displacement. Constriction of the penis is prevented, and in actual use in several hundred cases over a three year period, no constriction has been reported.

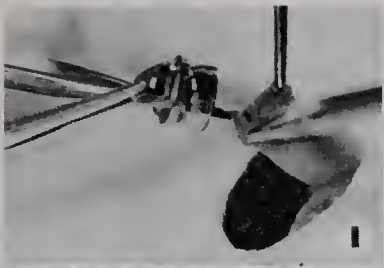
New users report these difficulties: (1) insertion of the ring inside the prepuce, (2) development of a hematoma just proximal to the ligature, (3) bleeding, (4) difficulty in removing the instrument, (5) subsequent constriction at the amputation line.

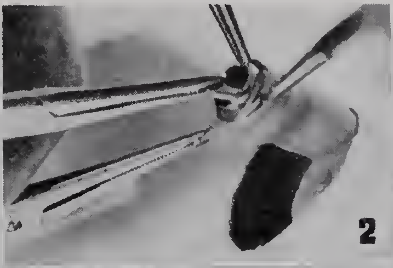
Four forceps are necessary for the operation. One is attached to prepuce at the freneun at mucocutaneous line. The others are so placed and attached to the prepuce that the three are equidistant from each other and form points of an equilateral triangle (fig. 1). Next the ring, smeared with vaseline and held in the fourth forceps, is inserted in triangular opening formed by the other three, using forceps at the frenum as a guide by resting the ring upon it and sliding the ring along it into the triangular orifice afforded by the three forceps attached to the prepuce (figs. 2, 3).

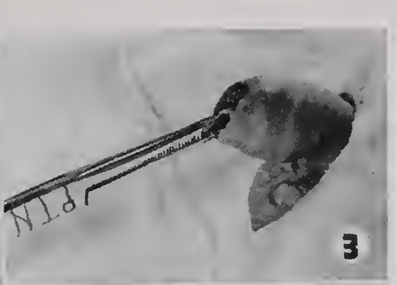
In some cases the operation is expedited by making a short dorsal slit in the prepuce. In many cases no slit is necessary, and in no case should it be long, as constriction of the prepuce occurs only near the margin, so a long slit is unnecessary. It must be remembered that the tie is made posterior to the slit, so a long slit makes the tie difficult or impossible.

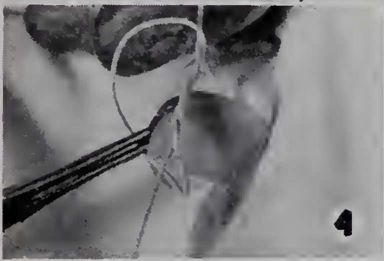
Where bleeding has occurred, it has been due to a slit extending to a point posterior to the ligature, or to failure to tie the ligature sufficiently tight. The ligature must be tied as tightly as possible, and must have a tensile strength of at least twenty pounds to tie tightly enough (figs. 4, 5).

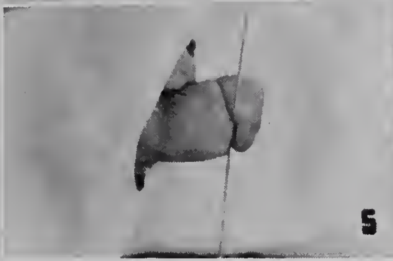
When the ligature has been tied, excision of the prepuce distal to the ligature is recommended only because its retention is unsightly. This is routinely done, with the ring providing a machined guide for











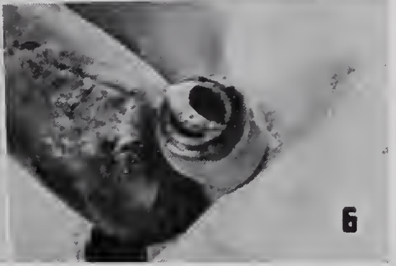


Fig. 1. Inserting instrument.
Fig. 2. Instrument being inserted.
Fig. 3. Instrument in place.
Fig. 4. Preparing to tie ligature.
Fig. 5. Ligature tied as tightly as possible. Operation completed.
Fig. 6. Excess prepuce removed. Ring left in place 48 hours for infants, 72 hours for adults. Ring removed by severing ligature.

either scissors or scalpel (fig. 6). However, a rim of tissue should be left distal to the ligature. If the prepuce is cut too close to the ligature, a vessel may retract and produce a hematoma even though the tissues remain held in place. The ring may be removed in forty-eight to seventy-two hours, although some leave it until it falls away spontaneously.

Removal of the ring is accomplished by severing the ligature and gently pushing the prepuce back off the instrument. If the devitalized tissue cannot be readily separated from the instrument, it is easily done by cutting the tissue at other points in addition to the site at which the ligature is severed. Remove the instrument (ring) by a rocking motion, at the same time pushing the tissues back from the ring on the same side. This same motion is used in introducing the ring.

Subsequent constriction of the free margin of the prepuce may result if the skin is allowed to roll inward when the instrument is inserted. This is prevented by grasping the prepuce at the mucocutaneous line. Dusting the margin after excision hastens drying of the devitalized tissue.

SHORTAGE OF MEDICAL CORPS OFFICERS

The War Department desires to contact as many civilian physicians of military age as possible, to expedite the procurement of medical officers. Shortages exist in all Corps Areas and an attempt will be made to assign as many as possible of the applicants to the Corps Area of origin.

Applications are for the Medical Corps only. The office of the Surgeon General will clear applicants through the Procurement and Assignment Service. Physicians who have enrolled with the Procurement and Assignment Service may apply, provided they have not sent in their completed forms to the Procurement and Assignment Service.

For information concerning procedure, physicians may contact the Surgeon of their nearest army medical installation. Oregon physicians may apply to the Surgeon, Headquarters Second Military Area, 225 U. S. Court House, Portland, Oregon.

NAVY ALSO GIVES ASSURANCE OF HOLDING A.M.A. SESSION AT ATLANTIC CITY

Additional official assurance of the advisability of holding the Ninety-Third Annual Session of the American Medical Association in Atlantic City June 8-12 is contained in the April 11 issue of *The Journal* of the Association in an editorial which reads as follows:

"Last week *The Journal* published a statement from Undersecretary of War Patterson urging continuation of plans for the annual session of the Association in Atlantic City. Discussion as to the desirability of proceeding with all the plans for the Atlantic City session led officials of the Association to communicate also with the Secretary of the Navy. A letter just received from Commander Edward A. Hayes, special assistant to Secretary Knox, states that Secretary Knox requested him to give the assurance that it is their hope that the proposed annual meeting of the American Medical Association will be a great success. To use the exact expression of Secretary Knox,

"'There is no doubt that our defenses along the entire Atlantic Coast will be greatly improved by June and I regard any danger to guests of Atlantic City from that source as insignificant.'

"As has been stated previously, the special issue devoted to the plans for the Atlantic City session will be *The Journal* for May 2. The programs are complete. Special symposiums related to problems of current medical interest and to military medicine and the contribution of visitors from some of the Latin American countries are assured. All the exhibit space available in the Scientific Exhibition has long since been assigned and practically all the space in the Technical Exhibits has already been taken."

METHODS OF RESUSCITATION

In advanced asphyxia, after breathing has stopped, rhythmic inflation and suction of oxygen or oxygencarbon dioxide (by means of an apparatus) at safe pressures is definitely superior to manual artificial respiration or rhythmic inflation (with an apparatus which blows air into the lungs without withdrawing it), George L. Birnbaum, M.D., and Samuel A. Thompson, M.D., New York, declare in *The Journal of the American Medical Association* for April 18 in the first of a series of papers on their investigation of various methods of resuscitation.

POSTGRADUATE LECTURES

PACIFIC NORTHWEST MEDICAL ASSOCIATION

Twentieth Annual Session, Hotel Multnomah, Portland, Oregon, June 17-20, 1942

PROGRAM

Fundamental Sciences

ANTON J. CARLSON, PH.D., M.D.
Professor of Physiology, University of Chicago

1. "Our Inadequate Criteria of Health."
2. "The Machinery of Appetite for Foods."
3. "What Is the Matter with the American Diet, and What Can the Doctor Do About It."
4. "Some Unknowns in the Physiologic Pathology of Ageing."

Medicine

ARLIE R. BARNES, M.D.
Professor of Medicine,
University of Minnesota Graduate School

1. "The Pulmonary Embolism Problem."
2. "Changing Concepts of Coronary Artery Disease."
3. "Electrocardiographic Abnormalities Important in the Recognition of Various Types of Heart Disease."

JEROME W. CONN, M.D.
Assistant Professor of Internal Medicine,
University of Michigan Medical School

1. "Nature of Obesity and Its Management."
2. "Spontaneous Hypoglycemia; Causes and Methods of Diagnosis."
3. "Spontaneous Hypoglycemia; Methods of Therapy for the Commonly Encountered Clinical Types."
4. "Changing Concepts of Human Diabetes Mellitus."

Endocrinology

ELMER L. SEVRINGHAUS, M.D.
Professor of Medicine,
University of Wisconsin Medical School

1. "Diagnostic and Therapeutic Problems Associated with the Menopause."
2. "The Use of Pituitary Preparations in the Treatment of Dwarfism and of Sex Retardation."
3. "Survey of Endocrine Preparations in Therapy by the General Practitioner."

Surgery

WARFIELD M. FIROR, M.D.
Associate Professor of Surgery,
Johns Hopkins University School of Medicine

1. "Treatment of Tetanus and the Use of Tetanus Toxoid."
2. "Treatment of Wounds Involving Soft Parts."
3. "Intestinal Antisepsis with Sulfonamides."

Radiology

FREDERICK E. TEMPLETON, M.D.
Associate Professor of Roentgenology,
University of Chicago School of Medicine

1. "Mucosal Relief Technic for the Roentgenologic Examination of the Esophagus, Stomach and Duodenum."
2. "Correlation of Roentgenologic and Gastroscopic Methods in the Diagnosis of Gastric Disease."
3. "Roentgenologic Aspects of Esophageal, Gastric, Duodenal and Jejunal Ulcer."

Military Medicine

D. W. WHEELER, M.D.
Lieutenant Commander, U. S. Navy Medical Corps,
Chief of the Medical Service, U. S. Naval Hospital,
Puget Sound Navy Yard, Bremerton, Washington
"Some Physiologic Aspects of War Injuries."

L. R. GOWAN, M.D.
Lieutenant Commander, U. S. Navy Medical Corps,
Head of the Department of Neurology and Psychiatry,
U. S. Naval Hospital, Puget Sound Navy Yard,
Bremerton, Washington
"Psychiatric Aspects of Military Disabilities."

The Medical Profession in War Time

BRIGADIER GENERAL LEWIS B. HERSHEY
Director of the Selective Service System,
Washington, D. C.
"American Medicine and the War."

P. W. GIBSON, M.D.
Colonel, U. S. Army Medical Corps,
Commanding Officer, Barnes General Hospital,
Vancouver, Washington
"The Doctor as a Medical Officer in the Army."

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Except Annual Banquet

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OREGON

REFRESHER COURSES IN PEDIATRICS AND OBSTETRICS
IN FOURTEEN OREGON CITIES,
May 11-28

Lecturers: H. Close Hesseltine, M.D.,
Professor of Obstetrics and Gnyecology,
University of Chicago School of Medicine
and
Group of Oregon Physicians.

WASHINGTON

PUBLIC LECTURES
GENERAL ASPECTS OF PHARMACOLOGY AND PHYSIOLOGY
University of Washington, Seattle
Lecturer: Otto Loervi, M.D.
Research Professor of Pharmacology,
New York University College of Medicine

Lectures
May 6: Drug Action and Drug Discovery
May 20: Adaptation and Regulation Within the Organism
May 27: The Organism as a Unit

IDAHO

The fiftieth annual meeting of Idaho State Medical Association will be held at Sun Valley Sept. 16-19. Program for this meeting will consist of postgraduate lectures. Lecturers will come from faculty of University of Oregon Medical School.

*Correction on p. 211.

PACIFIC NORTHWEST MEDICAL ASSOCIATION

GUEST SPEAKERS

ANTON J. CARLSON, Ph.D.
Prof. of Physiology, Univ. of Chicago

ARLIE R. BARNES, M.D.
Univ. of Minnesota Graduate School

ELMER L. SEVERINGHAUS, M.D.
Univ. of Wisconsin Medical School

WARFIELD M. FIROR, M.W.
Johns Hopkins Univ. School of Med.

FREDERICK E. TEMPLETON, M.D.
Univ. of Chicago School of Medicine

D. W. WHEELER, M.D.
Lt.-Com., U. S. Naval Med. Corps

L. R. GOWAN, M.D.
Lt.-Com. U. S. Naval Med. Corps

BRIG.-GEN. LEWIS B. HERSHEY
Director, Selective Service System

PAUL W. GIBSON, M.D.
Colonel, U. S. Army Medical Corps

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING PORTLAND, SEPT. 9-11, 1942

CHANGE OF MEETING PLACE

Owing to the probable inadequate hotel accommodations resulting from increased need of housing facilities during and following construction of the Army Cantonment near Corvallis, the place of the 1942 Session of Oregon Medical Society has been changed to Portland. The meeting will be held September 9-11.

ORGANIZATION ACTIVITIES

President W. W. Baum has been commissioned a Major in the U. S. Army Medical Corps and has reported for duty at the Spokane Air Base. A farewell dinner was given for him by the Council and members of the Marion County Society on April 16. Dr. Baum has performed outstanding service for the profession as counselor for many years and as president during the current year. His opinions will be missed in the council meetings and everyone wishes him well in his present service.

The Council of the State Society met in Portland April 11 and pondered enough material for several good headaches. The first was the proposed physical rehabilitation experiment of Selective Service enrollees. While expressing their willingness to cooperate in this experiment, everyone present scented the real danger in having the government sponsor any operative correcting program for draftees who have remediable defects. As a war emergency such action must be taken in some form, but the eventual implication of this "experiment" should be clear to all. Needless to say, the Council will keep a sharp eye on the developments of this type of assistance.

Another potential headache was the development of medical practice in cantonments under construction. Salary deductions for workers who desire service bureau coverage is not possible. The Southern Oregon service bureau and the P and S Hospital Association of Salem are handling the problem in their respective communities and the procedure under execution was given the nod.

D. R. Ross of Salem was named successor to W. W. Baum as the Marion County representative to the Trustees of Oregon Physicians Service.

The Teachers Examination Committee was authorized to appoint examiners in various parts of the state to interpret the radiographs of those who have positive tuberculin reactions. This action makes it possible to save a great deal of time and bother in getting the roentgen films interpreted because it can now be done in the communities in which the teachers reside.

STATE BOARD OF MEDICAL EXAMINERS

At the regular meeting of the Board of Medical Examiners held on April 7, Frank E. Fowler of Astoria was reelected president and L. S. Besson of Portland secretary-treasurer.

At this meeting the Board discussed at length many problems confronting it and members of their professions by reason of the present military emergency, and in order to meet the problem of licensure of interns who are completing their training this spring and who are subject to immediate call into service, the Board voted to hold a special State Board examination on April 21-23. The executive secretary was also authorized to schedule such other special examinations as might be necessary from time to time in view of telescoping the medical school's year, resulting in changing of dates for intern training. The regular State Board examinations will also be held on July 22-24, with the Board meeting regularly on July 24.

Reciprocity applications were also considered and licenses to practice medicine and surgery were issued to Stella Fisher, formerly of New York and now at The Dalles State Hospital, Bruce Leigh Jones, formerly of New York, Reuben Joseph Lockitch, formerly licensed in New York and now located in Portland, and Richard Innis Rich, formerly licensed in Pennsylvania and now located at Woodburn.

Among other business, reciprocity was established with Alaska and the license of William W. Rhodes, osteopathic physician and surgeon, was revoked for cause.

All physicians and surgeons now registered for practice in the State of Oregon, who are called into military service, are urgently requested to advise the Board offices in order that records may be current in this regard.

U. of O. MEDICAL SCHOOL

Commencement exercises for the class of 1942 of University of Oregon Medical School will be held Friday, June 12, in the school auditorium. Fifty-three students are candidates for the degree of doctor of medicine.

On June 22 the first session of the accelerated medical school program will open. The wartime schedule, designed to speed up America's output of physicians, will mean that each department's training program advances three months each year. Next year's session will open in March, the following year in January.

In the freshman class will be seventy-five students admitted from Northwest colleges and universities. This number is ten higher than is normally accepted, the increased number of students also being in line with the program to educate more men for medicine.

Financial problems remain unsolved for students who depend on summer vacations for earning tuition and living expenses. However, hope is held that a bill now before the United States budget director eventually will give student relief. It would provide loan assistance for professional students (engineers, doctors, etc.).

The new school schedule makes necessary additional instructor loads and more budget allowances for assistants and supplies. The budget income is increased, of course, by fees paid for the additional term's work. Faculty members will carry considerably heavier loads but they have willingly agreed to contribute their time to the new schedule as their part to the war program.

Effect of the accelerated program will be to reduce the time available for research except in certain fields, in which the war department is anxious that research be continued.

Dr. Adolph Weinzirl, head of the Department of Public Health and Preventive Medicine, has recently completed a state tour for the antivenereal disease campaign. He has made trips to the Coos Bay region, Salem, Corvallis and communities near Portland.

The Portland Academy of Medicine presented Arnold R. Rich, pathologist, as guest speaker at the school auditorium April 13, 14 and 15. Dr. Rich, Associate Professor of Pathology of The Johns Hopkins Medical School and Associate Pathologist to Johns Hopkins Hospital, spoke on differentiation of immature blood cells by means of motion pictures with particular reference to the origin and function of the lymphocyte, the pathogenesis of cirrhosis of the liver, and problems in the pathogenesis of tuberculosis.

RESIDENCY APPOINTMENTS AT UNIVERSITY OF OREGON MEDICAL SCHOOL

For the Year Starting July 1, 1942

Medicine

Resident, John Krygier
Asst. Resident, George Long
Asst. Resident, Joseph Scott

Thoracic Surgery

Resident, John Tuhy
Asst. Resident, Sheldon Domm
Asst. Resident, Waldo Mills

Surgery

Resident, Francis Wooliever
Asst. Resident, John M. Guiss
Asst. Resident, Robert Marcum

Urology

Resident, Leonard Offield

Radiology

Resident, Otto H. Grunow
Asst. Resident, Elizabeth Thornton

Obstetrics and Gynecology

Resident, Ronald Neilson
Asst. Resident, Jas. Whitely
Asst. Resident, Emmanuel Bitar

Pediatrics

Resident (Medicine) John H. Benward
Resident (Surgery) Leonard Jacobson

Ear, Nose and Throat

Resident, Bruce L. Titus

Dental Medicine

Resident, Howard Conrad

Pathology

Resident, John D. McGovern
Asst. Resident, Russell S. Jones
Asst. Resident, Dorothy White

Anesthesia

Resident, Marjorie Noble

Dermatology, Syphilology

Resident, Robert L. Day

Ophthalmology

Resident, Wm. L. Young

Orthopedic Surgery

Resident, Leslie Porter
Asst. Resident, Harold Davis
Asst. Resident, Paul Hafner

Interns

Herbert Armentrout
Kurt Aumann
Franklin Butler
Carl Calhoun
Frederic Gaarde
George Hank
Julius Hessel
Aarne Lindgren
Robert McCammon
Gordon McGowan
Thos. Parry
Gordon Prewitt
Robt. Rinehart
Arthur Seaman
George Thompson
John A. Larrabee

REFRESHER COURSE IN PEDIATRICS AND OBSTETRICS

Maintenance of medical standards on a high plane is the most important function of organized medicine and Oregon State Medical Society. As a contribution to this objective, it is the purpose of the Society to bring to the membership throughout the state refresher courses covering the various fields of medical practice. Through funds available by cooperation of Oregon State Board of Health, a series of lectures in pediatrics and obstetrics was given in ten cities of the state one year ago. A similar series will be offered this year beginning on May 11.

The program of lectures will be conducted in cooperation with the local medical societies, and wherever possible with cooperation of the local health department, an invitation being extended to members of neighboring local societies. Lecturers for the course will be H. Close Hesseltine, Professor of Obstetrics and Gynecology at the University of Chicago School of Medicine, and groups of physicians from Oregon who will present topics on a panel discussion basis.

SCHEDULE FOR LECTURES

May 11	Ontario
May 12	Baker
May 13	Pendleton
May 14	The Dalles
May 15	Bend
May 18	Lakeview
May 18	Klamath Falls
May 20	Medford
May 21	Grants Pass
May 22	Marshfield
May 25	Astoria
May 26	Portland
May 27	Salem
May 28	Eugene

PROGRAM

Subjects of Dr. Hesseltine's lectures are as follows:

1. Hemorrhages of early or late pregnancy.
2. Prenatal and postnatal obstetrical care.
3. Toxemia of pregnancy.
4. Sterility—its diagnosis and treatment.
5. Chemotherapy in pregnancy and puerperium.
6. Vitamins in pregnancy.

PANEL DISCUSSIONS BY GROUPS OF OREGON PHYSICIANS

Subjects to be selected by individual county medical societies:

1. Clinical Aspects of Chemotherapy.
2. Treatment of Acute Head Injuries.
3. Common Fungous Diseases and Their Treatment.
4. Pelvic Tumors Complicating Pregnancy.
5. Deficiency Diseases and Vitamin Therapy.
6. Therapeutics in Allergy.
7. Disabilities and Fractures of the Knee Joint.
8. Röntgen Therapy: Its Utilization in Malignancies and Inflammations.
9. Physiologic Responses in the Anxiety States.
10. Medical Problems Peculiar to the Aged.
11. Management of Cholecystitis.
12. Early Syphilis: Its Diagnosis and Treatment.
13. Immediate and Delayed Repair of Pelvic Relaxation.
14. Relation of the Surgeon to the State Industrial Accident Commission.
15. Fractures of the Hip Joint.
16. Röntgen Study of Cholecystitis: Its Alteration of Normal Intestinal Gradient.
17. Selective Service Examinations.

SOCIETY MEETINGS

CENTRAL WILLAMETTE MEDICAL SOCIETY

John Raaf of Portland addressed the April 2 meeting of Central Willamette Medical Society on the subject "Acute Head Injuries."

JACKSON COUNTY MEDICAL SOCIETY

Jackson County Medical Society met in Medford April 9. After the usual case reports LeRoy Jensen of Medford gave a paper on "Fear."

LANE COUNTY MEDICAL SOCIETY

On April 17 Lane County Medical Society held a forum meeting on the subject, "Physiological Response in the Anxiety States." The forum was conducted by Charles Sturdevant, John Evans and John Haskins, all of Portland.

LINN COUNTY MEDICAL SOCIETY

The regular meeting of Linn County Medical Society was held at Albany April 9, and was devoted mostly to transaction of business of the society.

MULTNOMAH COUNTY MEDICAL SOCIETY

At a special meeting of Multnomah County Medical Society held April 24, E. R. Kellersberger, General Secretary of the American Mission to Lepers, spoke on the subject, "Tropical Diseases." The talk was well illustrated by motion pictures and lantern slides, and was based on twenty-four years of experience in the Belgian Congo.

UMATILLA COUNTY MEDICAL SOCIETY

The April 14 meeting of Umatilla County Medical Society was addressed by Gurney Kimberley of Portland, on "Fractures of the Hip." Special emphasis was on the treatment of intracapsular fractures of the hip.

YAMHILL COUNTY MEDICAL SOCIETY

Yamhill County Medical Society was host to officers of the Oregon State Medical Society on April 7. W. W. Baum, president, spoke on "Policies and Activities of the State Society," and Henry Garnjobst, councillor, third district, on "Prepaid Medical Service for Standard Borrowers of the Farm Security Administration."

MEDICAL NOTES

Alumni of U. of O. Medical School elected the following officers at their recent meeting: Carl Ashley of Portland, president; vice-presidents, Lloyd Tegart, Portland; Fred Joy, Seattle; Archie Pitman, Hillsboro; F. C. Adams, Klamath Falls; secretary, Martin Howard, Portland, and treasurer, Walter Brodie, Portland.

The "War Session" harnstorming tour of the American College of Surgeons moved in and out of Portland on April 13 like a well ordered panzer division. The meeting was for the physicians and hospital personnel of Oregon, Washington and Montana and was well attended and instructive.

Theodore Stuckart recently opened an office in Stayton. Dr. Stuckart is a graduate of Creighton University and had been in general practice in Des Moines, Iowa.

Irvine R. Fox of Eugene and J. L. Ingle of La Grande have been reappointed as members of the State Board of Medical Examoners by Governor Charles A. Sprague.

Vernon A. Douglas, Marion County Health Officer, was appointed state medical officer for the Oregon defense council by Governor Sprague. His duty will consist of coordinating the work of the various county medical disaster relief units as set up by local defense councils.

Changes in Location: A. L. Victor from Salem to Yoncalla; A. J. McCannell from Silverton to Chiloquin.

Newly Located: T. H. Dunham in Salem; Robert T. Boals in Portland; E. J. Semansky in La Grande.

OBITUARIES

Dr. J. H. Rosenberg of Prineville died Feb. 24 at the age of 68. The cause of death was coronary thrombosis.

Dr. Charles L. Rybke of Portland died of coronary thrombosis on March 19 at the age of 61.

Dr. R. C. Field, age 63, of Sheridan, died of pneumococcus pneumonia complicated by pneumococcus meningitis on April 6.

Dr. C. S. Moore, age 55, of La Grande and Imbler, died on April 9 after a long illness.

CLINICAL FORUM

PEDIATRIC PROBLEM

N. J. M. was first seen by reference when she was two months and five days old. She was the second child. Her birth was normal. About ten days ago she became ill with what her doctor diagnosed as pneumonia. The last twenty-four hours her condition was much worse.

The child lay very much prostrated, emitting an occasional cephalic cry. She presented the picture of a very sick infant. She cried when handled. Temperature 103°, respiration 44, pulse about 160.

Head: Anterior fontanelle bulges, ears normal, no teeth, tongue coated, tonsils small. Neck: No goiter, no cervicals. Chest: Heart and boundaries normal, though action rapid.

Lungs negative except for suggestion of rales over left back. Abdomen: Liver palpable, otherwise negative. Genitalia normal. Skin: Marked seborrhea of scalp. Reflexes: Very slight stiffness of neck, Koenig mildly present, Chvostek, abdominal arm, wrist, ankle clonus, knee, all absent. The apparent illness of the child was all out of proportion to the findings.

Spinal puncture removed cloudy fluid under pressure. The cell count was 1750; also chains of strep were found on stained specimens. Five days later a reddened swelling appeared at the site of the lumbar puncture. In the pus which was evacuated a pure culture of strep was again demonstrated.

What would be your treatment of this case? What would be your prognosis, provided the child survived the infection, as to mental development and voluntary control of arms and legs?

COMMENTS ON OBSTETRIC PROBLEM IN APRIL ISSUE

First commentator states: This case is an example of one of the headaches that come to an obstetrician right out of a clear sky. Although there is no definite answer, one wonders considerably as to whether progesterone did any good whatever when given during her period of "cramps or show." From subsequent happenings, one would conclude that it had none, or a questionable effect. After labor had set in definitely, and on examination her cervix was found to be four cm. dilated, and there was no bleeding after rupturing the membrane, one had the right to assume that from then on the head would act as a tampon, stopping whatever bleeding might occur from the partial placenta previa discovered two or three days before.

The fact that the head did not act as a tampon and a sudden large hemorrhage occurred makes one surmise that there was a partial separation and displacement of the placenta downward. Proof of this is further augmented by the fact that as soon as the heavy hemorrhage occurred, a mass of placenta was discerned protruding through the cervix where it had not been before. Discovery that above this mass there was a contraction ring makes one conclude

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PROCUREMENT AND ASSIGNMENT IX CORPS AREA CONFERENCE

The need for physicians in the armed forces for 1942, physicians deemed essential for civilian medical care, the new questionnaire, the possible dislocation of physicians; these and many more problems and questions were topics of discussion of a meeting of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians held for the IX Corps Area at San Francisco, April 16.

The meeting, called by Henry S. Rogers, President of California State Medical Association and IX Corps Area chairman for Procurement and Assignment Service, was attended by chairmen of the three professions from seven Western states and Dr. Harold S. Diehl of Minneapolis who is a member of the National Committee on Procurement and Assignment. Washington State was represented by Raymond L. Zech, state chairman for physicians.

Although it has been said that the Army alone may eventually demand 60,000 physicians, this demand, according to Dr. Diehl, is not an immediate one. The figure is based on a long-range program and an army of eight million or more,. The army will require for 1942, however, about 22,000 physicians. Unofficial sources also indicated that physician up to the age of 36 would receive the rank of First Lieutenants, 36 to 45 rank of Captain and ranks above Captain given only upon special recommendation.

One of the problems, not immediate but foreseen, is replacement of physicians in towns, cities and counties who have been called into active military or naval services, either through the reserve forces, draft boards or through procurement and assignment service. Although physicians within the draft age may obtain deferment through their local draft board or at the request of the state procurement and assignment service to the draft board on the basis that they are essential to the civilian needs, such deferments are only temporary and may exist for limited periods until such physicians are replaced by older doctors. The problem is to find older physicians willing to dislocate themselves and serve in a "foreign" community. This problem may work itself out with shifting of populations or the national emergency may become so acute that physicians above the draft age may be assigned for the duration. It is hoped that this problem, when it comes and come it will, may be solved by the physicians themselves rather than have it solved for them by a federal agency.

DOCTORS CAN ENLIST DIRECTLY IN ARMY AND NAVY

It has been possible in the past for physicians to apply for commissions in the Navy without process of Procurement and Assignment Service. This still holds true of the Navy. Now word has come that Washington physicians may apply directly for commissions in the Army without process of Procurement and Assignment Service by making application to: Col. A. P. Clark, M. C., Commanding Officer, Station Hospital, Fort Lewis, or to Capt. E. S. Weisfield, M. C., District Surgeon, Washington Recruiting District, 450 Federal Office Building, Seattle.

It is understood that physicians will be commissioned commensurate with their age and qualifications but will not receive commissions in the Army higher than the rank of Captain unless by special recommendations. All applications are forwarded directly to the Surgeon General of the Army.

Also it is stated that a physician may make application for a specified rank, but such rank must be approved by the Surgeon General of the Army. A physician, in making application for a commission, is under no legal obligation and can refuse the rank designated by Suregon General.

PHYSICIAN WAR-AGE SURVEY

The Committee on Procurement and Assignment for Physicians has released a recent survey in Washington, showing the number of physicians under forty-five years of age within each county.

County	*Under Age 45*	*Total in County*
Adams	2	7
Asotin	0	3
Benton	3	7
Chelan	12	39
Clallam	7	18
Clark	16	40
Columbia	1	3
Cowlitz	20	37
Douglas	1	3
Ferry	2	2
Franklin	2	4
Garfield	2	4
Grant	4	8
Grays Harbor	14	43
Island	2	4
Jefferson	4	8
King	283	728
Kitsap	18	35
Kittitas	9	16
Klickitat	4	14
Lewis	13	40
Lincoln	5	11
Mason	5	8
Okanogan	13	18
Pacific	3	12
Pend Oreille	2	5
Pierce	82	174
San Juan	1	3
Skagit	9	31
Skamania	0	2
Snohomish	22	71
Spokane	83	215
Stevens	4	14
Thurston	13	29
Wahkiakum	1	2
Walla Walla	10	35
Whatcom	15	62
Whitman	11	32
Yakima	26	71
TOTALS	725	1,858

This does not include physicians employed by state institutions or federal agencies.

REHABILITATION PROGRAM

It has been announced by the Director of the Selective Service System of Washington that the long awaited rehabilitation program for registrants with minor physical defects will be inaugurated immediately in this state. The program has had a trial period in two eastern states and is now to be launched on a national scale.

"The rehabilitation program has been developed in order to correct the minor defects of registrants who have been rejected by the Armed Forces so that they may be made physically acceptable for service with the Army.

"It is proposed that this procedure shall be carried out by civilian physicians designated by the Director of Selective Service, the fees to be paid by the government."

The State Director has issued the following list of maximum fees and defects applicable to the physical rehabilitation experiment for the state:

Scheduld of Maximum Fees

Disorders of Vision	
1. Subacute conjunctivitis (2-3 visits weekly for one month	$25
2. Pterygium, unilateral	25
bilateral	40
3. Trachoma, simple uncomplicated (2 months)	50
4. Anomalies or disorders correctable by glasses (or by nonsurgical measures where permanent results can be secured within 3 to 6 weeks. Reclassification and treatment).	25
Disorders of Ears	
1. Removal of cerumen of impacted foreign bodies, unilateral	5
bilateral	10
2. Otitis externa (uncomplicated) $2 a visit; limited to	25
Diseases of Nose and Throat	
1. Subacute rhinitis and nasopharyngitis, 1 to 2 months	$25- 50
2. Mild subacute antrum and frontal sinus infection (palliative) (including puncture but not operation)	$25- 50
3. Hay fever, moderate, 1 to 2 months	$25- 50
Diseases of Skin	
1. Acute temporary infections such as acne, furunculosis, impetigo, approximately 13 visits per month	25
2. Acute temporary infestations such as	
scabies, visit basis	10
pediculosis, visit basis	20
trichophytosis, visit basis	20
Ringworm and other fungoid infections, visit basis	20
3. Cysts and benign tumors, deep removal	25
superficial	10
4. Mild, infrequent and allergic dermatosis, 1 month	25
2 months	50
Diseases of Extremities	
1. Moderate deformities of digit that may easily be corrected by amputation, without use of general anesthesia	25
for each additional, plus	10
2. Supernumerary finger or toe	25
for each additional, plus	10
Diseases of Neck	
1. Removal of small benign tumor	10
Diseases of Lungs and Chest Wall	
1. Subacute bronchitis, medical treatment, 1 month	25
2 months	50
2. Removal of small benign tumor of chest wall	10
Diseases of Abdominal Wall	
1. Removal of small benign tumor	10
Diseases of Genitals	
1. Gonorrhea and nonspecific urethritis, visit basis	25
2. Treatment of cystitis, 1 month, visit basis	25
2 months, visit basis	50
3. Chancroid, nonsyphilitic (chemotherapy, sulfone group)	25
4. Lymphopathia venerium, visit basis	50
5. Granuloma inguinale (chemotherapy, antimony), visit basis	50
6. Dilatation of mild strictures (each dilatation)	5
Overweight and Underweight for Height	
1. Overweight for height (1 to 20 pounds), visit basis including mild Frohlich's disease	25
2. Underweight for height (1 to 20 pounds) visit basis	25
3. Deficient chest expansion, visit basis	25
Vitamin Deficiencies	
1. Mild pellagra (nicotinic acid and other vitamin B products, 1 to 2 months, visit basis	50
2. Mild beriberi (vitamin B and thiamin), 1 to 2 months visit basis	50
3. Mild early scurvy (vitamin C and foods containing vitamin C), 1 to 2 months, visit basis	25
Miscellaneous	
1. Malaria, visit basis	50
2. Severe parasitic intestinal and other infestation of hookworm, tapeworm, roundworm, pinworm, visit basis	50

STATE COMMITTEE APPOINTED

George W. Cornett, president of Washington State Medical Association, has announced appointment of Horace J. Whitacre of Tacoma; H. E. Rhodehamel of Spokane and Nathan L. Thompson of Everett as a committee to cooperate with the State on a medical survey of state charitable and correctional institutions. The committee was appointed at the request of Mr. R. A. McGee, Supervisor of Public Institutions, who asked assistance of the State Medical Associatipon in outlining a program of necessary health standards for such institutions.

MEDICAL NOTES

Defense Notes. Collection of blood for preparation of plasma is being pushed in many sections of the state.* More than 10,000 volunteers have been asked to contribute their blood in Seattle. The donors are to present themselves at five Seattle hospitals where the blood is taken and plasma prepared. Following pooling of this plasma, it is frozen and stored for emergency use.* A blood bank is being developed at Auburn under the direction of John Owen Taylor.* North end counties are uniting to form a five-county plan for civilian defense.* Representatives of Snohomish, Skagit, Island, San Juan and Whatcom Counties met in Bellingham recently to formulate plans for handling medical supplies and exchanging essential items when necessary.* In Grant County a medical unit has been formed after survey of the medical resources of the county was completed. First aid stations have been located and Grant County chapter of the Red Cross is prepared to furnish uspplies.* In Ellensburg the call has gone out for donors for plasma preparation. It is expected that more than five hundred donors will supply blood.

Status of Witness Tested. Julius A. Weber of Seattle recently refused to testify when subpoenaed as an ordinary witness on a malpractice case with which he was not familiar. He was fined twenty-five dollars for contempt of court. He immediately appealed in order to determine whether a physician may be called to testify about a case with which he is not familiar and be given the statutory witness fee of two dollars twenty cents per day. This case should clear up the problem of hypothetical questions being presented to a physician who is called to testify to fact in medicolegal work.

Yakima Creates Blood Bank. Through the generosity of Yakima Elks Lodge No. 318, Yakima County Medical Society will establish a blood bank, to be financed by the Elks and maintained at St. Elizabeth's Hospital. The society hopes to establish 1,000 units. E. S. West has been named chairman of the Blood Bank Committee and will be assisted by J. E. Bittner, Jr. and W. S. Ginn. Mr. Arch Bortholet, Exalted Ruler of the Yakima Elks, will serve as lay member of the committee. All necessary equipment has been ordered.

Army Hospital Sites Chosen. The war department has announced authorization for construction of cantonment type hospitals at Spokane and Walla Walla. Construction will be supervised by the North Pacific division of the Army Engineers at Seattle.

Navy Hospital Answers Criticism on Sewage Disposal. The new Navy hospital in Seattle has made ample provision for disposal of sewage. This was announced after some Seattle residents expressed fears that sewage from the new hospital would contaminate the waters of Lake Washington.

Hospital Asks for Funds. The board of county commissioners of King County has asked the Defense Public Works Agency for $892,657 grant to be used in construction of an addition to King County Hospital, Seattle. It is expected this would provide a two-story addition and add two hundred beds to the capacity of the hospital.

Ritzville Hospital Assured. Pledging of funds totaling $18,367 has assured construction of the Ritzville General Hospital and an association has been formed to supervise construction and operation.

Medical Radio Program. King County Medical Society has sponsored a program to be broadcast over Station KIRO, Seattle, every Thursday evening at 9:15 o'clock. This is under direction of Frank J. Clancy, chairman of public relations committee of the King County Medical Society.

Theater Party Benefits Diabetic Camps. A theater party held at the Repertory Theater, Seattle, April 15, helped raise funds for the Seattle Diabetic Trust Fund, which sponsors the Priscilla White Camp for diabetic girls and Camp Banting for boys.

Health Officers Appointed. Harold B. Stout of Pateros will be health officer for entire Douglas County. He will be county physician for the north end of the county and Francis Hylton of Wenatchee will be county physician for the district along the river and the palisades.

Locations. S. A. Gianelli, formerly of Elma, has moved to Burien for practice. D. V. Ogevsky of Klickitat has retired because of ill health. Harold C. Hines of Toppenish has moved to Pasco for practice.

Weddings. Mrs. Jean Hughes and James Y. Phillips of Seattle were married April 10. William R. Broz of Seattle and Miss La Rose Forquer were marride in Seattle, May 9.

OBITUARY

Dr. Charles Edwin Montgomery of Walla Walla died March 26, aged 62. He was born in Valeene, Indiana, and received his medical degree from Kentucky School of Medicine at Louisville in 1906. He practiced in Denver for a time before coming to Walla Walla. He was a captain in the medical corps of the United States Army during the first world war and served at Camp Lewis. After the Armistice he sailed to Vladivostock as physician for a group of Czechoslovakian wounded soldiers who were being returned to their homes by the American Red Cross. The ship was wrecked off the coast of Japan after leaving Vladivostock and a special hospital was built, where the group spent ten weeks waiting for the repair of the ship. After delivery of patients at Trieste, Dr. Montgomery spent some time in Europe before returning to the United States.

Dr. Roderick D. McRae of Hunter died March 23, aged 77. He was considered a pioneer physician of the inland empire, having settled in Davenport in 1891. Six years later he moved to Hunter, where he resided until the time of his death.

Dr. Isaac Harter Moore of Seattle died April 12, aged 88. He received his medical education at University of Pennsylvania, where he graduated in 1878. He practiced for a time in Des Moines, Iowa, and later came to Idaho, where he was employed by the Union Pacific Railroad. Following this he was superintendent of the Idaho State Hospital at Blackfoot. During the Alaska gold rush he went to the Territory, where he was surgeon for the White Pass Alaska Railway and also did work for the Alaska Juneau and Treadwell gold mines. Later he returned to Seattle where he practiced for many years. He was retired from active practice six years ago.

Dr. James Monroe Sleicher of Chehalis died April 6, aged 89. He received his medical education from the Kentucky School of Medicine at Louisville, graduating in 1905. He came to Washington a year later. He had been in practice in Chehalis since that time.

Dr. Roy Sumner Wells of Coleville died April 5, aged 66. He was born at Rowley, Iowa, and received his medical degree from Rush Medical College at Chicago, graduating in 1900. After practicing for a time in Montana he moved to Colville in 1914, where he had practiced till the time of his death.

Dr. Walter Everly of Seattle died April 8, aged 65. He was born in Prairie City, Illinois, and received his medical degree at Rush Medical College in Chicago, graduating in 1902. Shortly thereafter he settled in Seattle. He served as a major in the medical corps of the Army during the first world war.

Dr. Marvin Cross Morris of Seattle died March 23. He was 31 years of age.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Cowlitz County Medical Society held its regular dinner meeting April 15 in Hotel Monticello, Longview. Speakers for the evening, taken from the local society, were W. A. Johnson who reported on a case of "Vincent's Bronchitis," and a case of "Regional Terminal Ileitis;" Moray Girling discussed "Unusual Pathologic Conditions of the Ear, Nose and Throat."

Guest of the society was Guy Boyden of Portland. A. L. Ringle, who is now affiliated with the Farm Security Administration in Portland, was also present.

KING COUNTY MEDICAL SOCIETY

A meeting of King County Medical Society was held April 6, at 8:15 p.m., in the auditorium of Medical-Dental Building, Seattle, president William M. O'Shea presiding.

Bruce Zimmerman was elected to membership. Applications were read from Charles S. Fine, Winfield Herman and Everett P. Nelson.

P. V. von Phul discussed "Common Sense Considerations in Treatment of Heart Disease." Histories of four cases were given, each illustrating phases of heart disease. Two required no medication, the other two requiring it daily, each of the two latter becoming the best judge of the amount of digitalis requircd. It was suggested that the physician endeavor to estimate cardiac capacity and guide the patient accordingly.

John M. Blackford read a paper on "Review of Hypertension," including historical data. Hypertension is vastly more dangerous in young than in older people. Treatment is far from satisfactory. Use of drugs was discussed and the value of psychotherapeutics was emphasized. Surgical treatment is in the experimental stage.

WALLA WALLA VALLEY MEDICAL SOCIETY

The regular monthly meeting of Walla Walla Valley Medical Society was held at Walla Walla April 9. Leon Goldsmith, cardiologist of Portland, gave an interesting paper on "The Heart in Pregnancy." The society joined in discussion and all agreed that it was a profitable meeting.

PUBLIC HEALTH ASSOCIATION

Southeastern Public Health Association met at Walla Walla March 26. The meeting was addressed by Curtis Chaffin, acting director of the division of mental hygiene of Oregon State Department of Health, who spoke on "Mental Hygiene Problems of a Community at War." The group was also addressed by J. A. Kahl, Walla Walla county-city health officer, A. E. Lange of Walla Walla and L. A. Dewey of Seattle, member of the state department of health.

STATE HOSPITAL ASSOCIATION

Annual meeting of the Washington State Hospital Association was held at Olympic Hotel, Seattle, April 18. Mr. Horace Turner, administrator of the Deaconess Hospital, Spokane, assumed the presidency, following Mr. Gordon W. Gilbert, also of Spokane. Miss Ethel Soper, superintendent of nurses at Seattle General Hospital, was chosen president-elect; Sister Mary Turibia of St. Joseph's Hospital, Tacoma, is first vice-president; Miss Gertrude Linn of the Memorial Hospital, Sedro-Woolley, second vice-president; Miss Harriet Smith, director of nurses at King County Hospital, Seattle, third vice-president, and Mr. John Dare of Virginia Mason Hospital, Seattle, secretary-treasurer.

WASHINGTON STATE OBSTETRICAL ASSOCIATION

The Association met at the King County Hospital, Seattle, April 18, President Dr. R. S. Mitchell presiding. The semiannual session was continued in the Medical-Dental Building and later its evening division was held in the Olympic Hotel.

Robert D. Mussey, Professor of Obstetrics, University of Minnesota, of the Mayo Clinic at Rochester, Minnesota, was the guest speaker. He gave a paper on "Hypertension in Pregnancy" and one on "Endometriosis." He also summarized papers given by the different members of the society.

Drs. Schauffler and Holman of Portland, and Hunt of Eugene, Oregon, members of the Portland Obstetrical Society, attended, also Dr. Trites from Vancouver, B. C. Dan Houston of Seattle was elected President, Robert Stewart of Seattle, Vice-President, and Hal Skinner of Yakima was retained in office as Secretary-Treasurer.

CLINICAL FORUM

(Continued from Page 176)

that the presence of the placenta so irritated the lower segment that it contracted, ejecting the placental attachments, forming a muscular spasm of the lower segment.

It was indeed fortunate that the obstetrician could be there at this time and take immediate action. Although he does not state it, had he been wearing a head stethoscope and searched for the baby's heartbeat, he would have learned that it ceased very shortly after the patient was placed on the delivery table.

The proper procedure would be to continue holding the hand in the vagina as a tampon, since bleeding at this time can be frightful, and anesthetize the patient deeply for a time sufficient to allow the relaxation of the lower uterine segment. The baby almost surely would be dead before this point. As soon as excellent and complete relaxation is obtained, go up by the placenta and bring down both the baby's feet. After delivering the feet, allow the bay to "sit on the perineum" for at least ten, possibly fifteen minutes. That would not only act as a tampon against further bleeding but would give full opportunity for the cervix to relax completely. Then the body and the head could be delivered with a minimum amount of harmful stretching of the lower uterine segment as the head came through. Intravenous oxytocics should be ready. Since the patient has been known for some time to be in danger of hemorrhage, donors should be on hand by this time and a transfusion would be most beneficial to tide over the emergencies that are quite possible.

Second commentator sayss The writer stated that when this patient was thirty-one weeks pregnant, she was hospitalized because of bleeding. Her cervix was found two and one-half cm. dilated, also she had a partial placenta previa. Since this girl was very anxious to have a baby and it is common knowledge that in placenta previa the fetal mortality runs very high, I feel that a cessarian would be more likely to produce a live baby than any other method of procedure. I suggest this, although realizing that two other factors might offset the above conclusion, (1) that a baby of cesarian birth has a statistical mortality a little higher than one through the normal passage, and (2) that the baby of thirty-one weeks gestation is distinctly a premature.

However, after the hemorrhage was severe and controlled only by direct manual pressure, the obstetrician had no choice of method. He was compelled to do a version and extraction. The baby, too, was forced to take his chances and the prospect is not alluring.

Conclusion of Case: The mother was given five minims of adrenalin while under deep anesthesia. This procedure relaxed the contraction ring, making possible podalic version and delivery of a stillborn infant.

Examination of the placenta revealed its cord to be attached to its lower third, the same portion which, being projected through the cervix, had been torn back around the cord. The remainder of the placenta was smooth and ischemic.

The patient lost from 1200 to 1500 cc. of blood. She was transfused with 1000 cc. while on the delivery table and suffered no shock. Eight hours later her r.b.c. was 3,800,000 with 78 per cent Hb. Sulfathiazole was given for a week. Her r.b.c. was then 2,600,000 and Hb. 51 per cent. No rise of temperature nor sign of infection appeared. She was given another blood transfusion and sent home.

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, SEPT. 16-19, 1942

MEDICAL NOTES

Naval Training Station at Coeur d' Alene. Contract has been let for a huge naval training station at Bayview, near Coeur d' Alene. Feature of the institution will be a hospital of one thousand beds. It is understood the contract has been let for all of the construction.

Health Group to Meet. Idaho Public Health Association will meet in Pocatello October 12. This announcement has been made by John R. Nichols, executive dean of Idaho Southern University and president of the association.

Clinic at Boise Junior College. Contract of $40,000 for construction of a public health clinic on the campus of the Boise Junior College at Boise has been let.

Locations. Glenn A. Hoss of Caldwell has moved to Council, where he will join Alvin S. Thurston. He replaces Howard Baughman, who has enlisted in the Army.

Dale Davies, who has been associated with Alferd Budge Junior in Boise, has been recalled to active duty in the Army Medical Corps. Dr. Davies served one year in the Medical Corps from July, 1940, until July, 1941.

SOCIETY MEETINGS

NORTH IDAHO MEDICAL SOCIETY

Regular meeting of the North Idaho Medical Society was held at the Lewis Clark Hotel, Lewiston, March 20. A film on gonadotropic hormones was shown.

POCATELLO MEDICAL SOCIETY

Pocatello Medical Society held its regular meeting April 2. Ralph M. Ray of Pocatello and A. R. Cutler of Preston were elected to membership.

Richard P. Howard presented a current review of ulcerative colitis, discussing treatment of seven cases in private practice. Pathology and symptoms were considered. He described efforts of various investigators to determine the bacterial cause of this condition. This has not been determined, nor has a vaccine been satisfactorily employed. Dietary treatment was discussed, as well as different forms of medication.

C. W. Dewey of Fort Hall Agency presented a patient, ten years of age, with interstitial emphysema. Symptoms were described detailing the condition in various parts of the body. No special treatment was applied. Ordinary cases recover without sequelae.

SOUTHWESTERN IDAHO MEDICAL SOCIETY

A meeting of the Southwestern Idaho District Medical Society was held on March 27, 1942, in Boise. The Society was addressed by Dr. George W. Holmes, Professor of Radiology, Harvard Medical School, on the subject of "Obstructive Lesions of the Bronchi."

BOOK REVIEWS

Urological Diseases of Pregnancy. By E. Granville Crabtree, M.D., Urologist to the Boston Lying-in Hospital. With 165 illustrations. 472 pp. $6.50. Little, Brown and Co., Boston, 1942.

Probably no complication of pregnancy causes the attending obstetrician more worry than renal disease. Often the renal embarrassment antedates the pregnancy and flares up during the child bearing period. The disease may be of many types, renal aplasia, anomalies, tuberculosis, stone, hydronephrosis, polycystic disease, strictures of the ureter, ectopic kidney and chronic infection, to mention some of them. The subject of pyelonephritis has been exceptionally well treated in this volume. By many photomicrographs are demonstrated conclusively the temporary and permanent histologic changes in the kidney as a result of infection. One learns why so many cases relapse. They are never cured in the first place. Pus cells disappear but cultures show that infection persists.

Added to the pathologic picture there are many chapters on treatment. Prophylaxis starts the treatment, as care of the teeth, diet, rest and care of the bowel. The value and nonvalue are mentioned of bladder drainage, pelvic lavage, sulfonamide drugs, possible crystalization of the tubules, the popular urinary antiseptics and surgery. Cystoscopy and ureteral catheterization are safe at any stage of pregnancy. Roentgenograms are harmless to the fetus. The chapter on renal insufficiency after blood transfusion is valuable. Finally, what are the renal contraindications to pregnancy, a question frequently asked of the obstetrician.

This book covers a new field in medical literature, filling a valuable place. It is founded on extension work, clinical reports and research. The authors have dug deep into the present literature on the subject and have been generous in quotations and opinions of others. A. H. Peacock

Pediatric Gynecology. By Goodrich C. Schauffler, A.B., M.D., Assistant Professor of Obstetrics and Gynecology, University of Oregon, etc. 384 pp., $5.00. The Year Book Publishers, Chicago, Ill., 1941.

Since most of us have had little training in gynecologic problems in children, and much of the information on this subject is recent, this text comes as a necessary and valuable addition to the medical literature. The author has had a considerable clinical experience with these problems (over 300 cases of juvenile vaginitis, for example), and in addition has made available in a brief and complete form the pertinent literature on the subject. His thorough discussion of vaginitis, detailed consideration of history taking and pelvic examinations in young children are especially worthwhile. The problems of puberty and a chapter on medicolegal aspects illustrate a most practical and sympathetic approach to the subject. The book is especially readable because it is written by a Northwest confrere, whom most of us know and whose style of writing is such that the text is almost as entertaining as it is instructive. Highly recommended as a practical, concise reference. P. R. Rollins.

The History and Evolution of Surgical Instruments. By Dr. C. J. S. Thompson, with a Foreword by Dr. Chaun-
and their evolution. The museum of the Royal College of
cey D. Leake. 113 pp., $8.50. Schuman's, New York, 1942.

This remarkable volume describes surgical instruments and their evolution. The Museum of the Royal College of Surgeons in London contained the finest collection of surgical instruments in the world. The building was destroyed with most of its contents as the result of Nazi barbarism. Fortunately, these instruments had been photographed and many of them are presented in this volume.

Scalpels are illustrated, the oldest dated 300 B. C., many of them of weird shapes, some having a straight blade, others being described by Hippocrates as the "bellied scalpel." Some of the most curious illustrations are of the amputation knife, the first having been mentioned about 600 B. C. Some present curious curves of the blade, with handles variously ornamented, Paré's incision knife having a handle ornamented by a female figure. Equally astonishing are the shapes and devices of saws.

Trepanning was one of the earliest surgical operations, devised to relieve pains in the head, and also furnishing an exit for escape of the disease demon or evil spirit. Some of the earliest trepans were worked by hand, as were those manipulated by some of our present oldest surgeons. Others worked on the principle of the bit and augur. Illustrations of artery and dressing forceps, bullet forceps adn extractors, as well as vaginal dilators and speculums indicate that the surgeons of this century were not inventors of many of the surgical instruments in common use by the modern surgeon.

Nasal Sinuses. An Anatomic and Clinical Consideration. By O. E. Von Alyea, M.D., Assistant Professor, Department of Larynology, Rhinology, and Otology, University of Illinois College of Medicine, Chicago. 262 pp., $6.50. The Williams & Wilkins Co., Baltimore, 1942.

The author has covered the subject of nasal sinuses in a thorough and comprehensive manner from the standpoint of conservative treatment. He goes into great detail with the anatomic study of the various sinuses after dealing briefly with their origin and development. Many useful anatomic drawings are presented. Quotations from modern writers on the subject are given freely, and controversial points in the matter of treatment are discussed fairly from all sides. He stresses the point of maintaining the action of the cilia in acute cases and condemns the use of drugs and chemicals that destroy them, or retard their action. One chapter is given over to allergy and another to sinus diseases in children. H. F. Thorlakson

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Endotracheal Anaesthesia. By Noel A. Gillespie, D.M., B.Ch., M.A. (Oxon.); D.A. (R.C.S. Eng.), Research Associate and Resident in Anesthesia, University of Wisconsin, etc. 187 pp, $4.00. The University of Wisconsin Press, 1941.

This book deals with a method that is becoming widely recognized as solution of many difficulties that have been faced by the anesthetist. Here are assembled the main historical and practical facts pertaining to endotracheal technic. Although a small volume, this monograph covers the subject completely and understandingly. Indications for and against the method and detailed description of technic are discussed and illustrated. It is a valuable book for all surgeons and anesthetists. W. A. Millington

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Year of Industrial and Orthopedic Surgery. Edited by Charles E. Painter, M.D., Orthopedic Surgeon the Massachusetts Woman's Hospital and Beth Israel Hospital, Boston, 432 pp., $3.00. The Year Book Publishers, Inc., Chicago, 1941.

This volume offers an excellent condensed review of the literature dealing with a large selection of orthopedic and traumatic conditions, appearing in the various medical periodicals for the year 1941. It is needless to say that it is indeed worthwhile as a summary and review of this division of medical literature. The selection of material has apparently been made to include the most representative work and the most desirable articles. Therefore, as a brief resume of the literature this handbook is useful.

D. G. Leavitt.

Professional Adjustments. By Gene Harrison, A.B., R.N., Educational Director, Druid City Hospital School of Nursing, Tuscaloosa, Alabama. 204 pp., $2.25. The C. V. Mosby Company, St. Louis, 1941.

The object of this booklet is to develop the personality of the nurse in dealing with the patient. "Her preparation is more than a matter of developing technics and schedules. These must be supplemented by ideals, character, personality and a spiritual quality that will guide her in every nursing procedure and permeate the very fabric of her personal life." These principles are further developed in the book.

OUTLOOK FOR MUMPS CONTROL IMPROVED

An outbreak of mumps in a military establishment may lead to serious consequences in the way of days lost through hospitalization, Conrad Wesselhoeft, M.D., late Captain Medical Corps, United States Army, Boston, and Charles F. Walcott, M.D., Major, Medical Corps Reserve, United States Army, Cambridge, Mass., declare in the current issue of *War Medicine,* published bimonthly by the American Medical Association in cooperation with the Division of Medical Sciences of the National Research Council. Present day basic knowledge of the nature of this disease and an understanding of how some of its manifestations can be alleviated and its spread prevented, should enable one to cope with it more successfully than in the past, the two men say.

X-RAY DIAGNOSIS
and
THERAPY

H. E. NICHOLS, M.D.
Seattle, Wash.
443 Stimson Bldg. ELiot 7064

NORTHWEST MEDICINE

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

MORE DOCTORS NEEDED FOR THE ARMY

Doubtless all physicians have noted the urgent need for more enlistments for service with the U. S. Army Medical Corps. It is stated 5,000 more men are wanted immediately to supply this demand. In order that the urgency may be met as speedily as possible, in each state has been set up a board for granting commissions, consisting of representatives of the office of the Surgeon General of the army, Adjutant General's office and the state representative of Procurement and Assignment Service for Physicians, Dentists and Veterinarians. This board has authority to issue commissions in the grades of lieutenant and captain, following the necessary physical examination. Medical representatives on this board from our states include the following: for Oregon, Wilson Johnston of Portland; for Washington, Raymond L. Zech of Seattle; for Idaho, F. M. Cole of Caldwell. Due notice will be given physicians of each of these states concerning the places and times for meeting these officials, from whom are received ratings and commissions.

Previous questionnaires have been received by all of our physicians, and those preferring army service have signified their wishes. Recently an additional questionnaire has been distributed and doubtless the needed number of physicians will be obtained who will be prepared to serve their country in this manner. The suggestion that physicians be drafted for army service is repellent to those in authority. The Surgeon General of the Army has asserted that an officer in the United States Army, and particularly a medical officer, should be a volunteer. In no war in which the United States has been engaged have members of the medical service been drafted. Voluntary enlistment places an officer in a higher position of respect and authority than one who must be subject to draft. Never have members of the medical profession yet failed to respond in sufficient numbers to a call of service to their country. They have been leaders in patriotic demonstrations and there is no question they will meet this present emergency with a sufficient number of enlistments.

URGENT DEMAND FOR NURSES

While much has been published of late concerning the shortage of doctors for war service, less emphasis has been placed on an equal emergency for trained nurses. At present this necessity is being stressed in both the medical and lay press. It is reported that the Army is in immediate need of 10,000 nurses, while the Navy must have about 750 more, in addition to 3,000 for Public Health service. It is asserted that the training schools for nurses in the United States graduate a sufficient number almost to meet the needs of private nursing and the demands hereby enumerated, if it were not for reduction of their number by matrimony, physical disability and disinclination to military service.

How to meet this urgent demand and supply the deficiency of nurses is the problem agitating officials in the various branches of service. None but efficiently trained nurses will satisfy the requirements. Practitioners of a generation ago have vivid recollections of the services rendered by the practical or partially trained nurse who served effectively with obstetric cases and, under immediate direction of the surgeon, enabled him successfully to perform minor and major operations. Why should not nurses of this character again be employed during the emergency? Physicians might dispense with the additional trained nurse in the care of many medical and surgical patients, employing in her place the practical nurse, thus releasing a goodly number of trained nurses to meet these urgent demands. It is stated that this large number of trained nurses are needed for service by July 1.

It will be nothing but wishful thinking to imagine that these requirements can be met as desired. In addition to the above suggestions, why could there not be a call for trained nurses who have retired from active nursing, even including some engaged in family duties, who might be enlisted to help relieve the existing emergency? Such assistance has been extended in the past when the urgency demanded it. If nurses are to be obtained in the numbers as announced for the different branches of service, it will be necessary to adopt measures similar to these which have been suggested.

INCOME TAX ON HOSPITALS

In the effort to secure revenue from all possible sources it is stated that the officials of the Treasury Department have recommended to Congress limitation of exemption from taxation for religious, charitable and educational institutions which has been the custom since the foundation of our government. The revenue act, since, 1913, provides exemption of the following institutions:

> Section 101-(6). "Corporations, and any community chest, fund, or foundation, organized and operated exclusively for religious, charitable, scientific, literary or educational purposes, or for the prevention of cruelty to children or animals, no part of the net earnings of which inure to the benefit of any private shareholder or individual, and no substantial part of the activities of which is carrying on propaganda, or otherwise attempting, to influence legislation."

The Internal Revenue Department has recommended to the Ways and Means Committee of the House of Representatives a change in the revenue laws which will affect all hospitals and impose an income tax on many of them. This attack on hospitals is based on the assumption that they are profit-making institutions by reason of charging some of their patients for hospital care, with a resulting profit to individuals interested in them. Apparently these officials are unaware of the fact that hospitals which are not supported by federal, state, county or municipal resources, must of necessity receive pay from a certain number of patients in order to obtain funds for existence. With the exception of a few hospitals maintained by private individuals for their personal profit, all hospitals dispense charity in the care of a large proportion of their patients. Some of these are maintained in part by endowments given by wealthy, charitably disposed patrons for the purpose of dispensing hospital care to people of limited or no resources.

If this proposed bill were enacted it would impose a great burden on the majority of hospitals. There would be an oppressive limitation on revenue from pay patients which are necessary to the support of these institutions. A great burden of bookkeeping would be required to comply with the requirements of the proposed act.

In order to prevent the passage of this act, all physicians and other friends of hospitals should protest to their representatives and senators at Washington against its passage. Referring to the Oregon section of this issue, one will note the action taken by the Council of Oregon State Medical Society urging its members to take such action. Other state associations might well follow a similar course of procedure.

ORIGINAL ARTICLES

CHEMOTHERAPY OF TUBERCULOSIS*

KENDALL EMERSON, M.D.
Managing Director,
National Tuberculosis Association
NEW YORK CITY

The antiquity of tuberculosis as a human disease has given us many centuries in which to study its chemotherapy. The opportunity has not been neglected. Priests, physicians and laymen have contributed such cures with a persistence that merits a higher reward. Progress in this field may be discussed in two periods; the first embraces thousands of years of recorded human history; the second, the sixty years since Koch discovered the cause of the disease. It is discouraging to admit that the vast scientific advantage enjoyed during the latter period has yielded so little substantial advance over the faltering empiricism that marked the previous centuries. There is certainly good ground for the skepticism which still greets a new announcement of cure or benefit from the drug treatment of tuberculosis.

Readers of medical history will realize that it is unproductive to search for progress in the chemotherapy of tuberculosis during the centuries of the past. Any conclusions that can be drawn are almost wholly on the negative side. We may perhaps argue that the futility of the remedies prescribed was so nicely proved as to relieve the necessity of further trial. To this should be added that the complexity of the problem was also amply proved. Hippocrates himself must be counted among the earlier skeptics in his advocacy of rest rather than medication.

There has been an unceasing groping of all ages for some adequate weapon with which to fight man's oldest and most inveterate enemy. That fight has by no means ceased and, while we are still obliged to look with chagrin upon our present meagre achievements, nevertheless progress today is not quite so static as it was from the years 450 B.C. to 1882 A.D.

DRUGS

I believe it would waste our time were I to pause longer than to mention and dismiss the iodine preparations, creosote, guiacol and the long list of other specific drugs employed during the remote and recent past and for the most part discarded today. Morphine and alcohol, abundantly prescribed, were obvious placebos.

There is, however, one interesting observation with a more modern ring to it. Throughout all the ancient writings milk appears and reappears as of significant therapeutic value, the milk of nursing women receiving conspicuous approval. With this exception most dietary recommendations are distinguished by their bizarre and often disgusting character, rather than by any logical reason for their use. Cod liver oil was introduced by Dutch merchants in 1650 and proved its value experimentally before modern research found the source of its virtue.

Chemotherapy of tuberculosis in all the years prior to Robert Koch sifts down, therefore, to milk and cod liver oil as its lasting contributions. This seems a slender yield in the march of medical progress. Yet both are significant as our later knowledge of their components has shown.

TUBERCULIN

The first step in chemotherapy of tuberculosis after the discovery of the tubercle bacillus was the historic work of Koch with tuberculin. When this substance had been developed, the achievement was hailed as the solution of the problem of tuberculosis control. You are all familiar with the subsequent disappointments, the heroic struggle of Koch to defend his thesis and finally, much too late, his acknowledgment that it was not the specific which he had believed and promised. Theobald Smith must have been very nearly as disappointed as Koch, when he was first obliged to admit the ineffectiveness of tuberculin as a protective agent in tuberculosis among cattle. Had Koch realized what an important part tuberculin was yet to play in the whole program of tuberculosis control, his later years would have been less embittered.

THE TUBERCLE BACILLUS

One by one, in the early years of this century, many of the pathogenic bacteria and protozoa yielded to specific chemotherapy. Organic arsenicals proved effective against the spirochete. A variety of dyes and synthetic chemicals have exhibited bacteriostatic and bacteriocidal properties, more often demonstrable in vitro than in vivo, leading research workers along hopeful lines of study and culminating in 1935, when Domagk announced the inhibiting effect of the azo dye, "prontosil," on streptococcal infection of mice.

There was no lack of experiment with these synthetic substances on the tubercle bacillus. Some showed good results in the test tube, but we are still faced with the fact that in vivo their results still stand close to the zero mark. Nearly twenty years ago Esmond Long pointed out that our lack of knowledge of the true nature of the microbacterium itself might stand in the way of progress. For example, is it a plant or an animal? It exhibits characteristics of both. Long remarks, "we shall know where to put the tubercle bacillus in the kingdoms of nature when we have learned not only its composition but the interrelations of its elements." Shortly before this time, in 1921, Gerald Webb had called attention to the fact that, in the rapid march of our knowledge of bacteria, research on the tubercle bacillus had recently fallen behind, due to the difficulties of its study and to the more productive results from investigation of other bacterial strains and families.

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*Read before a Meeting of Multnomah County Medical Society, Portland, Ore., March 29, 1941.

The result of these observations was establishment by the National Tuberculosis Association of a medical research committee which since that time has pursued consistent studies of the composition and biochemistry of the tubercle bacillus. The avowed object of the committee's work is, of course, the discovery of some effective chemotherapeutic procedure for use in the control or treatment of tuberculosis. Underlying it all has been recognition of the fact that the body tissues themselves have a certain power to destroy living bacilli which have gained entrance. Far too often this is insufficient. If its nature could be discovered and its efficiency increased, we might find ourselves well on the road toward the discovery of a specific preventive or curative medium.

There are at least two obstacles to this objective. The first lies in the body reactions to the bacillus when it gains access to the tissues; the second is the compostiton of the bacillus itself, one of the group of acid-fast bacteria. The first problem, tissue reaction to infection, appears to be intimately related to the process of tubercle formation. It is the feeling that the protective cellular and fibrous envelope, developed about an infected area, inhibits at the same time access of chemical poisons to the still living bacteria. We know that the introduction of lethal drugs into the circulation, at least in safe amounts, has scant if any influence in destroying the bacilli.

If the theory is correct that failure to penetrate the tubercle is a reason for the lack of chemotherapeutic results in tuberculosis, obviously the time to use drugs with hope of success is the earliest possible moment after infection. Acording to Baldwin, Gardner and Petroff, the bacilli first assemble in small groups just outside the lymphatics. Presumably at this time there is scant if any tubercle formation. Does this suggest that early preventive measures, some form of vaccination therapy, is our most encouraging lead for future study?

The other factor that blocks the road to discovery of a specific procedure appears to reside in the composition of the tubercle bacillus itself. It is research into this second problem which has occupied much of the atention of the Medical Research Committee. The procedure has been to grow the bacilli in large quantities, a task in which two drug firms have given most generous cooperation. The mass of bacilli produced, by the pound instead of in test tube quantities, has been analyzed first by breaking it down into its three main components, proteins, polysaccharides and fats or waxes, and then degrading these in turn into their simplest constituents. Keeping pace with the discovery of each new simplified substance produced, has been a careful biochemical study of their effect on animal tissue. Thus the polysaccharides are found to produce acute generalized inflammatory reactions in the tissues of animals into which they are injected. The wax forms typical tubercles without the presence of any living bacteria. The proteins cause the toxic symptoms of tuberculosis.

Thus far the most striking result of these studies has been the isolation and purification of the active principle of the protein, tuberculin. By her classical work in ultrafiltration and electrophoresis, Seibert has produced the purified protein derivative which supplies us with a tuberculin capable of being used quantitatively as well as qualitatively for testing purposes. PPD is a pure crystalline protein with molecular weight approximating 30,000, and has proved to be the most active in toxicity of the protein constituents of the bacilli.

SALTS OF HEAVY METALS

Sanocrysin, sodium-gold-thiosulphate, is perhaps the best known of the various salts of heavy metals employed in treatment of tuberculosis. Mollgaard in 1924 experimented largely with this drug in the belief that it possessed the property of penetrating the tubercle and killing the bacilli. It has been used extensively in a number of foreign countries and Saye of Barcelona, until recently at least, has continued to advocate its efficacy.

Two criticisms have been leveled against the exhibition of gold therapy. The first was that its known toxic effect on the organs of the body rendered it too dangerous an instrument to use; the second, that no adequate control experiments had been carried on to yield a convincing picture of its effectiveness.

Patients treated with even moderate dosage of sanocrysin show consistent signs of poisoning, fever, albuminuria, erythematous skin eruptions, loss of appetite and loss of weight. Advocates of the procedure, however, maintain that these effects are due not to the poisonous effect of the drug but to toxins released by the killed bacteria as a result of the treatment. Similar known toxic effects from heavy metals in nontuberculous animals leave room for skepticism.

Lack of reliable control experiments was an obvious deterrent to the indiscriminate use of gold salts. To correct this lack a most careful test was made by Amberson, McMahon and Pinner.[1] Twenty-four patients consented to undergo the experiment. These were selected in pairs, each two being as nearly as possible in the same stage of the disease and all having been under observatiton long periods, so that their native resistance and previous behavior under treatment were well known. The twenty-four patients were kept on complete bed rest for a month before beginning medication and also during the full period of the experiment. Treatment was instituted in one of each pair, the other remaining as a control. Selection was made by lot and only three people knew which were the treated and which the control patients.

It is unnecessary to detail the careful physical, laboratory and roentgen studies carried out on both groups throughout the whole course of the experiment. All the treated patients, after the third or fourth dose of sanocrysin, showed signs of renal damage. This was not severe, however, and only one developed chronic nephritis. Another of the treated patients died early in the experiment of diffuse parenchymatous hepatitis. It does not seem just to attribute this to the drug alone, although one might fairly assume that the use of heavy metals could not be beneficial to such an underlying condition.

All but one or two of the untreated patients gained weight and in general condition. The reverse was true in the treated group. Moveover, the loss of weight and anorexis in the latter persisted for a very long period after the experiment was stopped. But the significant part of the test lay in the behavior of the disease itself. A thorough roentgen series indicated no benefit whatever to those under treatment as compared with their controls.

Mollgaard and others who have used gold therapy extensively seem to agree that it has little or no effect in advanced cases which show marked fibrosis and cavitation. They claim, however, that striking results can be obtained in a certain number of the earlier exudative cases. One must realize, of course, that this is the group among which we look for improvement under other forms of treatment without the addition of any form of chemotherapy.

Those who carried out the controlled study above referred to remain committed to the following judgments: (1) more extensive controlled experimentation is indicated; (2) there was no evidence of any benefit to the twelve treated cases as compared with their controls; (3) compared with the controls most of the treated cases became worse; (4) harmful systemic effects included gastrointestinal, kidney, skin, mucous membrane and nutritional disturbance; (5) one patient treated died with parenchymatous degeneration of the liver; (6) no evidence was produced to justify the use of sanocrysin.

SULFANILAMIDE GROUP

When in 1935 Domagk demonstrated the bacteriostatic action of prontosil, research phthisiologists manifested immediate interest. The active fraction of prontosil, sulfanilamide, was studied in its effect on the tubercle bacillus in vitro and in vivo. The perennial hope that at last an effective "cure" for tuberculosis might be in sight received a renewed stimulus and many laboratories took up the study.

It would be wholly premature to draw final conclusions from the experimental work thus far reported. Some derivative or modification of the drug, sulfanilamide, may yet yield far different results. However, it is safe to say that at the moment any justification for its wider use in treatment of human cases of tuberculosis rests on exceedingly slippery ground. Further animal experiments are definitely indicated in the light of some apparently favorable results.

Some recent work by Coggeshall at Rockefeller Institute, as yet unpublished, leads to further skepticism regarding the possible help we are destined to secure from sulfanilamide. Recently he has been using this drug in treating monkeys for malaria. His success has been phenomenal, practicaly all of the animals responding promptly to the treatment. In three or four instances, however, no favorable results were obtained. On examining these he found every one to have well developed tuberculosis. This would certainly seem to remove any probability that sulfanilamide possessed any specific effect on tuberculous lesions once established in animal tissue.

PROMIN

In 1940, Feldman, Hinshaw and Moses[2] announced an experiment with promin (diaminosulfone glucoside), one of the sulfanilamide group. This preliminary report on the use of promin to protect guinea pigs heavily infected with tubercle bacilli showed startling results. Since that time similar experiments appear to confirm the work of the Mayo Clinic and there is hope that this drug may prove of genuine bacteriostatic value in man.

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[1] Amberson, J. B. Jr., Mahon, B. T. and Pinner, M.: Clinical Trial of Sanocrysin in Pulmonary Tuberculosis. Am. Rev. Tuberc., 24:401-435, Oct., 1931.

[2] Feldman, W. H., Hinshaw, H. C. and Moses, H. E.: Effect of Promin on Experimental Tuberculosis. Proc. Staff Meet. Mayo Clin., 15:695-699, Oct., 1930.

Much experimentation should still precede advocacy of its use. Preserving a wholly open mind, it is still well to remember that many other drugs in the past have shown striking results on early trial which have not been substantiated later. Furthermore, beneficial effects observed in animal experimentation do not always hold in the treatment of human patients.

THE BIOCHEMICAL APPROACH

An interesting and complicated field in which to study the chemotherapy of tuberculosis is provided by the newer research in biochemistry. It would be impossible for any but a skilled biochemist to discuss this broad area of study. Two aspects of the work at present in process deserve special mention, though they do not permit of exhaustive discussion. The first is that of the vitamins.

Cod liver oil has been used for many years as an admitted aid in treatment of both pulmonary and extrapulmonary tuberculosis. More recently the laboratory has shown us that this is due to its high content of vitamin D. This vitamin has to do, in part at least, with calcium absorption and calcium metabolism which is so essential a contributor to our balance of health. Sunshine has the same effect, due to the fact that our skins contain ergosterol in considerable quantity and irradiated ergosterol supplies vitamin D. Adequate sunburn, in other words, is one of nature's methods of health promotion. Likewise, irradiating cows yields milk of high vitamin D content. Empirically sufficient observation of the desirable effects of both cod liver oil and sunshine in cases of tuberculosis has accumulated. Today we are more familiar with the reasons for this and, therefore, perhaps better able to determine optimum dosage and avoid harmful efforts to increase vitamin D therapy beyond its limit of usefulness.

Vitamin D is sometimes described as a traffic policeman, directing the path which body calcium shall take. It has the capacity to increase calcium absorption from the intestinal tract, hence to increase calcium blood content and then to direct it to certain areas where it is deposited in extra large quantities. These areas are not the bones but may be glands, blood vessels, kidneys or other organs. Obviously, this is a somewhat risky business, but our belief in the evidence of healing tuberculosis as shown in calcification of lungs and bronchial glands leads to the belief that at least adequate calcium absorption is a material aid to recovery from tuberculous infection.

Vitamin A and vitamin B are the other two vitamins which have special therapeutic interest in handling tubeculosis. Neither has the specific importance of vitamin D but both have a definite place in the therapy of this disease because of the harmful effects on the fighting power of the organism in case of their serious lack.

Vitamin A, like D, is fat-soluble. It has a present vogue because of the discovery that its lack causes night blindness. Aviators especially have flown eagerly back to their carrots, tomatoes, butter and cheese to increase their night perception of enemy airplanes. But the quality of vitamin A which interests us particularly in the treatment of tuberculosis is its peculiar influence on the formation of epithelial tissue. Its lack induces a thickening of all epithelium, eyes, skin, intestines and kidneys, interfering seriously with nutritional and metabolic processes.

Vitamin B is a complicated subject. Thiamin, riboflavin, nicotinic acid, pantothenic acid, pyrodoxin and the more recent botin are probably but some of the essential ingredients of this protean vitamin. Thiamin is a powerful oxidizing agent working on the carbohydrates, an indispensable element in proper absorption of bread and stupidly eliminated from white flour by our modern milling processes. The others you know as specifics in beri-beri, pellagra and other nutritional deficiency diseases.

Vitamin C, water-soluble like B, is likewise a strong oxidizing substance for both fats and carbohydrates, maintains a health nutritional balance and protects intestinal absorption. These, again, are essential nutritive adjuvants to the general therapy of tuberculosis.

You may think that in this mention of vitamins we are somewhat off the strict subject of this paper. With this I should be inclined to differ in consideration of the fact that empirically an essential aspect of the treatment of tuberculosis has always lain in the field of nutrition. Once stuffing was in vogue. Considerable harm was done thereby. Today we are developing a rational basis for our practice in feeding the tuberculous, one on which the patient may be enabled to build up that maximum resistance to the disease which for the present must still be our chief reliance in treatment.

GRAMICIDIN

Another modern discovery in the field of biochemistry is gramicidin. At the moment this substance has no bearing on tuberculosis therapy. Yet it fits into a novel approach to the chemotherapy of this disease and suggests a new and perchance profitable line of study. Gramicidin, as you all know, is an organic chemical substance, extracted from certain soil bacteria, probably gram-negative types, which interfere with the normal metabolism of gram-positive bacteria. In a sense, one may say that the gram-positive bacteria provide its food and sustenance. Acting in a manner similar to sulfanilamide, it is even more antagonistic to the growth of gram-positive bacteria. If an extract of the capsules of gram-negative bacteria is added to a mixture of gramicidin and gram-positive bacteria, the gram-positive bacteria which were inhibited by the gramicidin grow again. The tubercle bacillus is mildly gram-negative.

Somewhere in nature there is perchance an enzyme or a nonprotein fraction of an enzyme molecule which will inhibit the growth of the tubercle bacillus. How can this be found? At the moment there is no answer to this question, but it brings us to the next stage in the story. Some years ago William Charles White experimented with earth worms inhabiting soil that had been heavily infected with living tubercle bacilli. After sectioning many of these earth worms and also examining their excreta, he was unable to find any acid-fast bacilli, although the soil remained full of the living bacteria. At some point in the digestive tract of the earth worm these germs had been killed and digested. The presence of a catalyst in the earth worm was assumed but could not be demonstrated.

Today a follow-up on this early work is being undertaken by the National Tuberculosis Association. Virile tubercle bacilli are being fed into the digestive tract of the earth worm, the worm sectioned shortly after and again the disappearance of the acid-fast bacilli is confirmed. Theoretically the next step is to determine the section of the earth worm where this destruction of the bacilli occurs, collect a sufficient supply of this material and proceed to determine, if possible, the enzyme or fraction which possesses this bactericidal property. While the research may lead us into entirely different and altogether new paths, the suggestive action of gramicidin gives hope at least of further discoveries along this interesting line.

INTRAVENOUS THERAPY

Use of arsephenamine intravenously to shorten the period of treatment in syphilis has renewed interest in that method of chemotherapy in tuberculosis. Zucker at Montefiore Hospital in New York has begun a series of treatments in selected cases. Hyman[3] makes the following statement:

> "In unpublished work performed on the service of Max Pinner at the Montefiore Hospital, Gary Zucker has initiated some interesting observations concerning intravenous drip chemotherapy with sulfanilamide.
>
> "Using an 0.8 per cent solution in isotonic sodium lactate, 1200 to 1600 cc., containing 10 to 15 grams of the drug, were injected between 9 a.m. and 7 p.m. The blood level, which could be made to vary with the rate of injection and the total amount administered, reached 16 to 26 mg. per cent within four hours. This concentration could be maintained until the infusion terminated. In the morning, when the drip was again set up, after a lapse of approximately twelve hours, the level was still at 10 mg. per cent. In the course of five days patients received approximately 60 grams of the drug intravenously. Only a very small percentage of the sulfanilamide was acetylated, the largest portion, perhaps 85 to 90 per cent, circulating as the effectual free form. These concentration curves follow closely those prepared by Sobotka for blood arsenic in massive dose chemotherapy of syphilis.
>
> "This high concentration was maintained without marked objective toxicology, though subjectively the patient suffered considerably from the familiar cerebral manifestations. Blood counts showed a fall of hemoglobin of 10 to 20 per cent. The urine revealed crystals but was free from manifestations of kidney irritation.
>
> "The easy assimilation of these drugs enterally has overshadowed the results of intravenous use. Whether more can be accomplished clinically with the sulfonamides by the maintenance of these higher levels of concentration remains yet to be seen."

Somewhat unfortunately, it seems to me, he is employing the method on patients in far advanced stages where other efforts at relief have failed. I cannot escape the feeling that drug therapy in the very early stages, before the tubercle bacillus has become relatively invulnerable in its protective fortress, is the more logical procedure. The objection to this latter procedure, however, is obvious, since so many minimal cases go on to improvement and arrest under old routine treatment.

In case evidence is presented that intravenous treatment checks spread of the infection and at least holds the older lesions in status quo, it will certainly give encouragement for further experiment along this line.

CONCLUSION

At least this discussion proves that scientists have not yet produced the magna sterilans for tuberculosis. The encouraging signs in the midst of the continuing obscurity are two. We know far more than we ever did before about the tubercle bacillus itself and its effects on body tissue. We have a new channel in biochemical research through which to work.

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[3] Hyman, H. T.: Massive Dose Chemotherapy by Intravenous Drip Method. Bull. New York Acad. Med., 17:407-482, June, 1941.

Perchance the clinicians and the epidemiologists with their present methods will have eliminated tuberculosis, as the veterinarians have in dairy herds, before the laboratories produce the needed specific. Of one fact we may be certain, however. The research workers have put their hand to the plough and they will not now look back until they have come to the end of the furrow.

TREATMENT OF PULMONARY TUBERCULOSIS*

FOLLOWUP STUDY WITH SPECIAL REFERENCE TO COLLAPSE THERAPY

Harold Guyon Trimble, M.D.
OAKLAND, CALIF.

A more dynamic type of treatment of pulmonary tuberculosis has made rapid progress during the past twenty-five years, initiated largely by improvement in roentgen technic. By using some form of roentgenography of the chest, which we consider a fifth method of physical examination, a better understanding of the pathology of tuberculosis has been achieved, particularly in its earlier stages. Because of this understanding of the facts in development of clinical disease in the tuberculosis patient, previous standards of treatment, which were guided largely by symptoms, have given way to treatment based upon definite pathology. Collapse therapy of some type is now found to play a very important, if not one of the most important roles in treatment, resting on a foundation of adequate rest plus proper education of the patient.

Many such studies have been made from time to time, but as treatment advances and newer procedures are constantly being added, additional followup studies are valuable. This, after all, is but the physician's method of bookkeeping in the language of business, "taking stock" of his methods of treatment, of evaluating the real results of treatment so that he may better give his individual patient competent and well-considered advice.

In such a study there are many questions that can be answered. This problem with us was approached purely from the clinical standpoint. We wanted definite figures on the results of certain procedures for our guidance in outlining for any individual patient the proper medical approach toward his particular problem.

With these points in mind and for these purposes, a statistical study was made of patients who were discharged from the lung service of Fairmont Hospital of Alameda County in the year 1934. It has been frequently stated that of those patients who have a recurrence of previously active pulmonary tuberculosis, 80 per cent will come within two years after discharge from the hospital and most of the other 20 per cent will come within five years.

Data were completed for 263 of the 331, or 79 per cent of the patients discharged in 1934. Fourteen died within the five-year period of causes other than tuberculosis, leaving 249 that we could study for this purpose. The following table is presented to show the results of all types of therapy:

Total number of patients discharged in 1934, about whom our information is complete for five years after discharge	249
Discharged dead from hospital on their first admission	92
Discharged living	157
Died of pulmonary tuberculosis in the five-year period since discharge	41
At the end of two years	25
At the end of five years	16
Living at the end of five years	116
Patients sputum-free or negative	102
Working full time	52
Working part time	6
We do not know the patients are working	44
Patients showing positive sputum five years after discharge	14

Table 1. Results of all types of therapy.

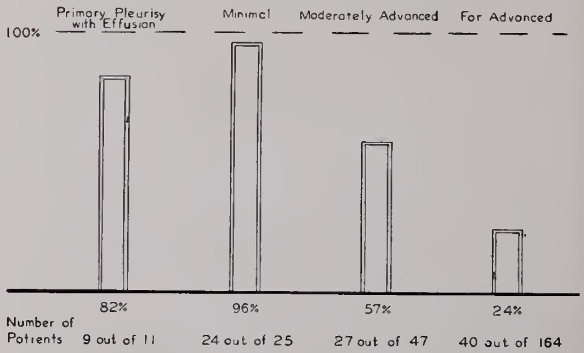

Fig. 1. Number of patients discharged from Fairmont Hospital in 1934, treated by both bed rest alone and collapse therapy, who are clinically well and sputum free or negative five years after discharge.

You will note that we have adopted the rigid standard on our followup that the patient is actually working, not that medical opinion feels the patient is capable of working.

One-half of these patients, about whom we have complete information for the five-year period since discharge, have died of pulmonary tuberculosis, either in the hospital or in the five-year period since discharge. Forty-one per cent are sputum-free or sputum-negative five years after discharge and 6 per cent are still living and raising positive sputum.

You will note from figure 1 that primary pleurisy with effusion is not an innocuous disease, that almost one out of five of these patients developed pulmonary tuberculosis within the five years after discharge. You will further note that minimal tuberculosis, when adequately treated, has an excellent chance of remaining well; that in moderately advanced tuberculosis, only six out of ten will remain well over a period of five years; that when the patient comes to us with far-advanced pulmonary tuberulcosis, only one out of four can be brought to working efficiency in this period of time.

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*Read before a meeting of King County Medical Society, Seattle, Wash., April 6, 1942.

Further illustrating the advantage of early diagnosis is figure 2. It is seen that all cases of minimal tuberculosis, in which pneumothorax was tried, were adequately collapsed; that 70 per cent of the moderately advanced cases received adequate collapse; but in only 50 per cent of the far-advanced cases could any form of collapse therapy in any combination achieve a successful result.

This is of importance when we study the results of those who were adequately collapsed and those whose collapse was attempted but which was inadequate (fig. 3). You will see in the moderately advanced group, where the collapse was adequate, that is, sputum repeatedly negative and cavities if any closed, 83 per cent were well and working at the end of the five years. But in those moderately advanced cases, where the collapse was inadequate, that is, sputum could not be made free of tubercle bacilli and cavities if any could not be closed, only 16 per cent were clinically well and working at the end of five years.

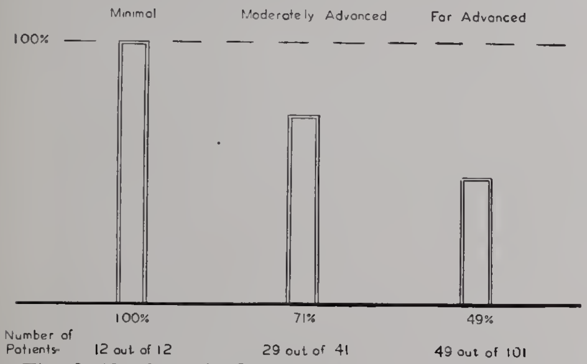

Fig. 2. Number of adequate collapses out of those attempted among patients discharged from Fairmont Hospital in 1934.

Coming to the far-advanced group, the results show a still greater divergence between adequate and inadequate collapse. Of these far-advanced cases, where the collapse was adequate, 79 per cent were well and working, whereas in those far-advanced cases where the collapse was inadequate, not a single one could be found that was clinically well and sputum-free after five years. Of course, there are certain cases of advanced pulmonary tuberculosis that will become clinically well and sputum-negative without treatment of any kind; these are unusual, but do occur. There is a somewhat greater percentage, still very small, that, even with collapse therapy which is inadequate over a long period of time, may achieve finally closure of their cavities and present a negative sputum. In this particular year, however, in the cases we studied, no such case was found.

The following table 2 is a further analysis of these figures, showing the percentage of patients in various classifications with and without adequate collapse therapy, who were well and not infectious at the end of five years, as well as the approximate chance of each patient at the beginning of treatment of being clinically well, with sputum negative at the end of this period of time.

Classification	Total Discharged From Hospital	Clinical Well and Non-Infectious	Per Cent Well and Non-Infectious	Approximate Chance of Being Well and Sputum Negative
Primary Pleurisy w. Effusion	11	9	82	8 in 10
Minimal Lesions	25	24	96	10 in 10
Treated with bed rest	13	12	92	9 in 10
Collapse therapy attempted	12	12	100	10 in 10
Inadequate				
Adequate	12	12	100	10 in 10
Moderately Advanced Lesions	47	27	57	6 in 10
Treated with bed rest	6	1	16	1 in 10
Collapse therapy attempted	41	26	63	6 in 10
Inadequate	12	2	16	1 in 6
Adequate	29	24	83	8 in 10
Far Advanced Lesions	164	40	24	2 in 10
Treated with bed rest	63	1	1.6	1 in 63
Collapse therapy attempted	101	39	39	4 in 10
Inadequate	52	0	0	
Adequate	49	39	79	8 in 10

Table 2. Shows numbers of patients and results at end of five years.

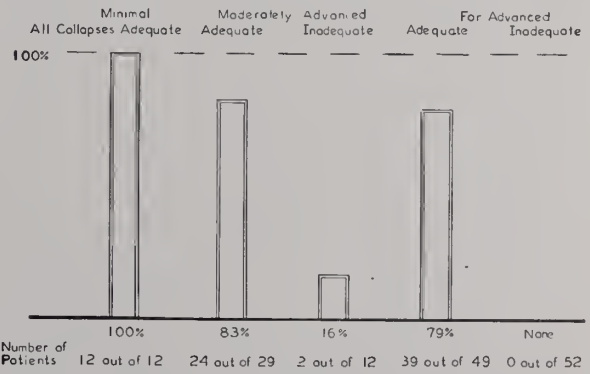

Fig. 3. Number of patients discharged from Fairmont Hospital in 1934 who are clinically well and sputum-free or negative five years after collapse was established.

This is a most potent argument for the well-known dictum that the earlier the tuberculosis is found, the better chance the patient has of remaining well. It means, when extended, that case finding procedures are obligatory in the field of tuberculosis. Practically all of these minimal cases came to us as a result of examination of known contacts, or through school, industrial or other surveys. Occasionally one is found by chance when examined for some other condition. It is most unusual for a patient to be sent into the hospital with minimal tuberculosis that has been diagnosed as a result of his going to his physician complaining of symptoms referable to the chest.

When we speak of collapse therapy in general, we mean that artificial pneumothorax is induced if possible. Producing collapse by interruption of the phrenic nerve was formerly freely used, but with further experience and the weight of evidence of studies on the oxygen exchange of normal and abnormal lungs, it has been shown that this is not a benign procedure and is not to be undertaken lightly. The number of phrenic operations done by us of recent years has been greatly reduced. There are also very few cases of pneumoperitoneum included in this particular study, as it was in this year that this was first used by us as a clinical procedure in collapse therapy for pulmonary tuberculosis. Pneumoperitoneum is growing in indications and usefulness in our work. A study of our results to date is being done and will soon be available.

I should also like to emphasize that there are some types of collapse therapy, developed since 1934, that are achieving for themselves an established place in the routine treatment of pulmonary tuberculosis. There is, further, no illustration in this group of tracheobronchial tuberculosis, as in 1934 it was not routinely considered as important in the study of the patient's problem. Our figures, therefore, apply to the classical types of collapse therapy. These are the methods still having the widest application. The newer types of collapse have specific uses, but their indications in general are relatively narrow, though important.

We have also been interested in the results of individual types of treatment, the chance of successfully establishing the collapse and, most of all, if the collapse is successfully established, what finally happens to the patient. The following table 3 evaluates the results of these different types of treatment:

Minimal Lesions Only

Total minimal lesions treated		13
Reactivation within two years		1
Uncontrolled. Lesion too far advanced for any active therapy. Fatal issue		1
No reactivation in five years		12
No sputum, patients working full time	8	
No sputum, patients clinically well. We do not know they are working	4	

Table 3. Shows results of different types of treatment. with bed rest alone.

You will note that this applies only to minimal lesions. All moderately advanced and far-advanced lesions had some type of collapse therapy at least attempted.

The following table 4 shows that pneumothorax could be adequately established in 44 per cent, or less than half of the cases where it was tried.

Total attempted unilateral pneumothoraces			135
Total adequate			60
Died in the hospital		3	
From extrapulmonary tuberculosis	1		
From other causes than tuberculosis	2		
Total inadequate			75
Impossible because of no free space		34	
Collapse obtained but inadequate due to adhesions or cavities so placed that they were not closed		28	
Good collapse had to be abandoned because of some reason		13	
Spontaneous pneumothorax	1		
Development of empyemas	8		
Hemoptyses	1		
Air emboli occurred and patients refused further air	2		
Fluid developed and free space lost	1		

Table 4. Shows results of pneumothorax.

Of these adequate unilateral pneumothoraces, 30 per cent showed reactivation within five years, whereas 70 per cent were sputum-negative and free of cavity or active tuberculosis by roentgenogram at the end of this time. Therefore, approximately one-third of the patients who had an adequate collapse by unilateral pneumothorax and who did not abandon refills against their physician's advice, had reactivation of their tuberculosis within five years; about one-half of these will reactivate within two years and the others within the subsequent three.

The three important complications of pneumothorax are air emboli, empyema and nonexpansile lungs. Of the 132 lungs compressed by unilateral and bilateral pneumothorax during this year, representing many hundreds of refills, air emboli occurred four times. In no case was the issue fatal nor were there any permanent ill effects. Fifteen per cent of the pneumothorax patients developed empyema, in which only 4 per cent could not be controlled by adequate treatment.

With regard to nonexpansile lungs, 87 per cent expanded satisfactorily when the abandonment of the pneumothorax was indicated. Thirteen per cent were apparently not expansile and must either continue pneumothorax or have a plastic operation on the chest to obliterate the pleural space.

Results of bilateral pneumothorax were very interesting. Ninety per cent of those who had adequate collapse had no reactivation within five years. Considering the extent of the lesions and the usually accepted poor prognosis in lesions extensive enough to warrant bilateral pneumothorax, these results are very encouraging.

With regard to thoracoplasty, previous to operation we have been in the habit of dividing our patients into poor and good surgical risks. Of those classified as poor surgical risks, 40 per cent survived surgery. On the other hand, 92 per cent of the good risks were discharged living from the hospital. Four out of five of the thoracoplasties were considered adequate on discharge, that is, sputum-negative and cavities, if any, closed. Seventy per cent of the thoracoplasties are clinically well with sputum negative at present. The other 30 per cent are either dead or still raising positive sputum. There are a number of other procedures, a few of which were done on some patients. These cases are not sufficient in number to warrant any extensive discussion here.

Let me again emphasize that addiitonal procedures for collapse therapy have been developed since 1934. Most of those which offer any promise of success we have tried. A few have stood the test of time and are part of our armamentarium; the rest have been discarded as not fulfilling their initial promise of good results, or as being too hazardous, considering the value that the patient received from its use.

This study confirms the fact that early tuberculosis is the type most amenable to satisfactory, long-time, clinical results; that with adequate collapse therapy, even far-advanced disease can be controlled, but procedures that do not give adequate collapse in the individual patient must be modified or abandoned in favor of a more satisfactory approach.

In conclusion, it is only by studies of this kind that we can intelligently advise our patients, as a definite knowledge of end-results should be our clinical guide.**

**This study was made possible by the technical assistance of Marion E. Cory, B.S. Statistician, Alameda County Tuberculosis Association, whose energy, enthusiasm and meticulous care are gratefully acknowledged.

THE TUBERCULIN PATCH TEST

ITS EVALUATION AS COMPARED TO THE MANTOUX P.P.D. TEST

Philip H. Narodick, M.D.*

SEATTLE, WASHINGTON

In 1937, Vollmer and Goldberger[1] reported the use of a test to determine the reaction of the skin to filter paper which had been saturated with tuberculin and then dried. They described the similarity in end-results between this tuberculin patch test and the Mantoux test with the use of old tuberculin. The reliability of their results prompted further investigation. For many reasons it would be important to know how the Vollmer patch test compares in reliability with the standardized Mantoux test done with purified protein derivative. In control of tuberculosis, the value of a diagnostic test is dependent on its ability as an aid in detecting active cases; hence, evaluation of a new test may properly be based on its performance in such cases.

The Vollmer is a one-test procedure; therefore, much valuable time and effort can be saved where large series of tests are performed. The test, being so simple, is easy to apply and can be performed and interpreted by a nurse properly instructed.

In addition to its time-saving element and its feasibility, it is also true that the Vollmer test eliminates severe reactions often encountered in the Mantoux test, and, furthermore, removes the psychogenic reaction, particularly of children, to the needle and syringe.

The purpose of this research is, therefore, evident. It is my intention to determine if the simple patch test, which saves time, labor and pain, is as reliable in its end-results as the standardized and generally accepted Mantoux test.

Before explaining the routine of application, it would be well to note the method employed in preparing the tuberculin patch test. According to the Lederle Laboratories[2] the following is the method of preparation:

> Filter paper squares (10 mm. square) are saturated with concentrated old tuberculin prepared by growing tubercle organisms according to the method and upon the synthetic medium recommended by the Bureau of Animal Industry. These squares are then dried at 45-50° C. until completely desiccated. They are then kept in a desiccator until ready for their assembly on the adhesive strips.
>
> Control patches are made in the same way from similar broth without the addition of the growth products of the tubercle bacilli.
>
> The completed patches are made by placing a square of the tuberculin saturated near each end of a 1-inch by 3-inch strip of waterproof adhesive with a control patch in the center. The crinoline is then replaced on the adhesive and the entire strip placed in a moisture proof cellophane envelope and sealed.

ROUTINE PROCEDURE

In order to make a reasonably accurate comparison, one thousand individual cases were tested. That is, to one thousand individuals who presented themselves consecutively to the clinic, either for diagnosis, treatment or hospitalization, both means of testing were applied. Both the tuberculin patch test and the purified protein derivative were applied routinely to males and females of all ages, the youngest being nine months, the oldest seventy-seven years.

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*Superintendent and Medical Director, King County Tuberculosis Hospital.

[1] Vollmer, H. and Goldberger, E. W.: New Tuberculin Patch Test, Am. J. Dis. Child., 54:1019-1024, Nov., 1937.

[2] From letter from Edwin F. Voight, Assistant Director, Human Biological Division, Lederle Laboratories.

The same routine was applied to all one thousand cases tested. The first PPD[3] dilution was given on the right forearm at the same time that the tuberculin patch test was applied to the left arm. The PPD was read forty-eight hours after injection. If the test was negative, the second PPD dilution was injected on the left arm below the level of the patch test. In children the PPD was done on the right forearm, the tuberculin patch test placed on the back. The patch test was removed in forty-eight hours and then read forty-eight hours after removal. The reactions were not classified as 1, 2, 3, or 4 plus; they were merely called positive or negative. The PPD was determined as positive or negative according to the usual standards.

The Vollmer test is best accomplished by first selecting the site that has little or no hair, such as the flexar surface of the arm or forearm. In children the back is used, that area over the spine between the shoulder blades. The patch is placed lengthwise down the spine. The area upon which the patch is placed is rubbed briskly with acetone until a definitely pronounced and unmistakable hyperemia is produced. The crinoline (stiff gauze) is removed from the patch which is then applied to the area; firm pressure is exerted with the palm of the hand, followed by gentle but firm rubbing. Usually, another piece of adhesive about 1x5 inches is applied over the patch test to keep the edges from turning up. It is important that the patch should not be allowed to become wet; the test must be left in situ for forty-eight hours and then removed. Forty-eight hours after removal of the patch test, the reading is made. A reading is positive when one or more small follicles appear at the site of the two outside patches. The site of the inside or middle patch must be perfectly clear.

The reaction of the tuberculin patch may vary in degree and extent. A small follicle is frequently found under one of the tuberculin patches. Sometimes these follicles may have the appearance of a macule, papule or vesicle, the bases of which are usually red and infiltrated. Or the vesicles may coalesce to form a large bulla conforming to the outline and size of the tuberculin patch. After forty-eight to seventy-two hours the vesicles and papules have a tendency to disappear, leaving a dark red infiltrated area. The time of the complete disappearance of the lesion is variable, sometimes a week or two, but some reactions have been known to take a month to disappear.

It is seldom that a severe reaction is produced. Occasionally one sees what is termed as a four-plus reaction in which bullae are present and the area is extremely irritated and inflamed. However, there was not a single case of a constitutional symptom produced in any of the individuals who had a so-called severe reaction.

The patch is an extremely stable test which does not deteriorate with time. To determine its stability, a group of fifty tests was set aside in a drawer with no special attention given to storage, and subjected to the usual atmospheric changes. A test was taken occasionally from this stored group and appied to a known tuberculous case. The last test was used twenty-three months after the first test, and produced just as reliable a result.

In this study of 1000 individual cases, there was a total of 2528 tuberculin tests performed, of which 1000 were Vollmer tests and 1528 were tests with purified protein derivative. Of the 1000 Vollmer tests, 661 were positive, 339 negative. Of the 1000 PPD$_1$[4] tests, 472 were positive, 528 negative. These 528 nonreactors were given the PPD$_2$[5] test to which 199 reacted positively and 329 failed to react (chart 1).

	Vollmer	PPD$_1$	PPD$_2$
Positive	661	472	199
Negative	339	528	329

Chart 1. Total tests performed.

Of the 1000 cases examined, 332 proved to be cases of active pulmonary tuberculosis; 668 were nontuberculous.[6] In the group of active tuberculosis there were 185 males, 147 females. In the nontuberculous group there were 316 males and 352 females (chart 2).

	Active Tuberculosis	Nontuberculous
Male	185	316
Female	147	352

Chart 2. Active and nontuberculous according to sex.

Next, the 1000 cases are divided into ten age groups, ranging from nine months to seventy-seven years. The divisions are enumerated from 0 to 4 inclusive, from 5 to 9 inclusive, from 10 to 14 inclusive, etc. (chart 3).

	No. of Cases	Active Tb.	Nontuberculous
0- 4	38	2	36
5- 9	107	8	99
10-14	131	7	124
15-19	162	43	119
20-29	227	114	113
30-39	146	64	82
40-49	92	44	48
50-59	58	28	30
60-69	29	15	14
70+	10	7	3

Chart 3. Age groups.

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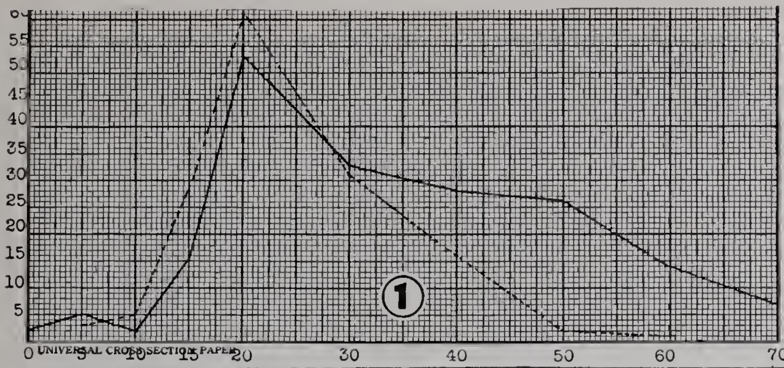
[3] Purified protein derivative.

[4] Purified protein derivative, first strength.

[5] Purified protein derivative, second strength.

[6] Nontuberculous is the term used throughout this paper to refer to those individuals who, according to roentgenogram and other examinations, were negative as far as active tuberculosis was concerned, and also to those who did not react to the tuberculin test.



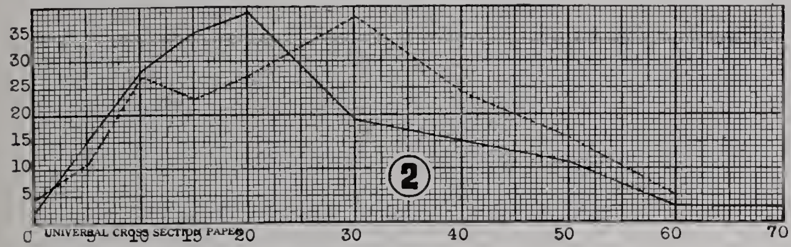


Fig. 1. Active tuberculosis according to sex and age.
Fig. 2. Positive reactors, nontuberculous.
Number of cases in perpendicular column; age groups in horizontal line. Male, ———; female,- - - -.

Chart 4 shows the occupations of all individuals tested. It is divided into two groups, the cases of active tuberculosis and the nontuberculous. There are eleven classifications, including: (1) children below school age, (2) students, (3) housewives, (4) skilled workers, (6) unskilled workers, (7) food handlers, (8) clerks and allied workers, (9) agricultural, (10) professional and (11) unclassified (those who did not specify any occupation).

	Active Tb.	Nontuberculous
Children	3	51
Students	51	320
Housewives	72	157
Skilled workers	22	21
Semi-skilled workers	36	19
Unskilled workers	66	43
Food handlers	18	8
Clerks	27	14
Agricultural	6	21
Professional	19	4
Unclassified	12	10

Chart 4. Occupations.

The graph above, Fig. 1, deals exclusively with cases of active tuberculosis. It is designed to show the distribution according to age and sex of the 332 cases of active pulmonary tuberculosis. In the male group there are 185 cases; in the female, 147.

Figure 2 shows the age and sex of the positive reactors in the nontuberculous group. The 345 cases are divided into 170 male, 175 female. It is interesting to note how closely the age groups in the two figures parallel each other. Examination of the figures reveals that the largest number of positive reactors falls into the age groups of 20 and 30.

Further study is given in chart 5 to the positive reactors in the nontuberculous group by classifying them according to occupations. The same occupational classifications are used here as in chart 4.

Children	9
Students	138
Housewives	97
Skilled workers	15
Semi-skilled workers	15
Unskilled workers	28
Food handlers	7
Clerks	11
Agricultural	15
Professional	4
Unclassified	6

Chart 5. Occupations of positive reactors, nontuberculous.

UNUSUAL REACTIONS

The first four unusual reactions are found in the group of active tuberculosis. The next five irregularities are in the nontuberculous group.

Active Tuberculosis

Case 1. Male, age 66, far advanced terminal tuberculosis, had negative PPD_1, negative PPD_2 and negative Vollmer.

Case 2. Male, age 4, of definitely proved active primary infection with a tuberculosis family history, had negative PPD_1, negative PPD_2 and negative Vollmer.

Case 3. Male, age 39, showed evidence of far advanced terminal tuberculosis with negative PPD_1 positive PPD_2 and negative Vollmer.

Case 4. Male, age 17, wth tuberculous peritonitis, had negative PPD_1, positive PPD_2 and negative Vollmer.

Nontuberculous

1. Eleven cases in the nontuberculous group had negative PPD_1, positive PPD_2 and negative Vollmer. Four were females, ages 10, 29, 33 and 41; seven were males, ages 13, 15, 19, 20, 23, 59 and 77.

2. Eleven cases in the nontuberculous group had negative PPD_1, negative PPD_2 and positive Vollmer. Six were females, ages 8, 15, 17, 19, 37 and 42; five were males, ages 7, two aged 20, 44 and 56.

3. One case, female, age 26, had positive PPD_1 and negative Vollmer.

4. One case, male, age 40, in which there was a definite history of tuberculosis with evidence of bilateral mottling which appeared to be hardened, had negative PPD_1, negative PPD_2 and negative Vollmer.

5. One case of pleurisy with effusion had negative PPD_1, negative PPD_2 and negative Vollmer. Inasmuch as there is difference of opinion as to whether pleurisy with effusion constitutes active tuberculosis, and since this case was not proved to have it, for the purposes of this research I shall consider this case within the nontuberculous group.

SUMMARY AND CONCLUSION

In the total number of tests performed, as enumerated in Chart 1, the patch test picked up 661 positive reactors, as compared with 472 with PPD_1 and 199 with PPD_2. Hence, the total number of positive reactors, adding together those in the nontuberculous group and those in the active cases, was 671 with both tests of purified protein derivative as compared with 661 with the patch test. To make an accurate comparison, therefore, we must conclude that the one-test Vollmer is 98.5 per cent as accurate in denoting positive reactors as the two-test Mantoux. Moreover, to achieve approximately the same end-results it was necessary to make 1528 tests with purified protein derivative as compared with 1000 tests done with the Vollmer.

Of the 332 cases of active pulmonary tuberculosis, 104 had negative PPD_1. Of these 104 cases, 102 responded to the PPD_2 test. Two failed to react to both PPD_1 and PPD_2. In other words, 330 cases responded to either the PPD_1 or the PPD_2. In this same group of 332 cases of active pulmonary tuberculosis, four did not respond to the Vollmer test, which means that 328 cases did respond.

As was mentioned at the very outset of this paper, undoubtedly the most important single finding has to do with the ability of the Vollmer test as an aid in detecting active cases. In comparing the two procedures of tuberculin testing, there was agreement between the results with PPD and the Vollmer patch test in 99.4 per cent of the active cases. Moreover, only 332 Vollmer tests were required as compared with 436 PPD tests to arrive at approximately the same end-results. And since the diagnosis was so obvious in all of the cases in the unusual group of active tuberculosis, the percentage of error can be considered as nil.

In the unusuals in the nontuberculous group, it is interesting to note that the one group of eleven cases reacted to the PPD_1 but did not react to the Vollmer. In the other group of eleven nontuberculous individuals, there was just the opposite result; they failed to react to the PPD_1 and PPD_2, but did react to the Vollmer. In only one case was there a positive PPD_1 and a negative Vollmer. Our comparative tests have shown that nearly all of the discordant results occurred in testing the nontuberculous cases.

I have found at the hospital that the Vollmer patch test is simple, easy to apply and to interpret. No severe reactions are ever encountered, and in addititon to removing the psychogenic reaction to the needle and syringe, the patch test eliminates pain. Being a one-test procedure, the Vollmer is rapidly performed, and in doing a large series of tests the time element is an important factor.

Most important of all, however, is the fact that the simple patch test is as reliable in end-results as the standardized and generally accepted Mantoux PPD test, 98.5 per cent as accurate in picking up positive reactors in all cases, 99.4 per cent as accurate in denoting postive reactors *in active cases,* with the use of a single test.

LESIONS OF THE INTERVERTEBRAL DISC

FACTS AND FALLACIES

PAUL G. FLOTHOW, M.D.

SEATTLE, WASH.

(Concluded)

The above statements are entirely my own concepts. The statements I am about to make about the ligamentum flavum are also based entirely upon my own observations.

Regarding hypertrophy of the ligamentum flavum as a clinical entitity and as the cause primarily of low-back pain with sciatic reference, let me say I feel that nine times out of ten the diagnosis of simple hypertrophied ligamentum flavum at time of operation is the neurosurgeon's excuse for not finding what he went after, namely, a herniation or protrusion of the disc.

It has been my misfortune a number of times to resort to this diagnosis. While unquestionably there are cases in which all of the symptoms are caused by hypertrophied ligaments alone, the percentage of such cases should be exceedingly small as compared with definite herniations or protrusions of the disc in any man's practice, certainly not over ten per cent. Reports have appeared in the literature citing as high as thirty-eight per cent of the cases having hypertrophied ligaments without abnormality of the disc. In my opinion this denotes diagnostic error rather than proving that there is such a high percentage of hypertrophied ligaments causing symptoms.

Previous to the time when our diagnostic procedures became as accurate as they have in the past two or three years, I had occasion in several instances to explore cases where an error in diagnosis of a disc lesion had been made. In these cases I was forced to fall back upon an operative diagnosis of hypertrophy of the ligamentum flavum and, unfortunately enough, my results in this type of case were almost universally bad. At the present time it is rare for me to fail to find the lesion for which the exploratory operation is done. On the few occasions when I have failed to find a disc it has been my practice to sever the posterior longitudinal ligament regardless, and in many instances I have been able to remove the nucleus pulposus, even though there was no palpable deformity at the time of operation.

In the small number of cases in which I have been unable to find anything except hypertrophied ligaments, my results have continued to be poor with one or two startling exceptions. It has come to the point that when this occurs and I am forced to make a diagnosis of hypertrophied ligamentum flavum to account for the symptoms, I feel very definitely that one of two people is usually at fault, either the roentgenologist for making a mistake in the diagnosis, or the surgeon in being unable to find the lesion. Since it is possible for a disc to show a deformity in the lipiodol column at the time of fluoroscopic examination, and for this deformity to disappear on the operating table, it is always wise, when the surgeon is confronted with this condition, to slit the longitudinal ligament and "fish" for the nucleus pulposus.

Hypertrophied ligamenta flava are practically always found in association with either protrusions or herniations of the discs, and are apt to be particularly marked in cases of protrusions because of congenital factors and repeated back strain. In a few instances I have encountered simple herniations of the disc without hypertrophy of the ligamenta flava, but in every instance this has occurred in women who have had typical back-injury histories and who have not subjected their backs to the strain of working and the continuous insult that occurs to the laboring men. There is no question in my mind that hypertrophy of the ligamentum flavum is purely and simply a protective mechanism on the part of nature put forth in an effort to immobilize the abnormal joint space.

Too frequently the removal of this structure is simply undoing nature's handiwork of protection rather than remedying a fault, and it is my feeling that our percentage of simple hypertrophied ligament cases should constantly decrease with improvement in our diagnostic ability.

(Since the above statement was originally written eight months ago, I have operated on nineteen cases and in only two of these has the diagnosis of hypertrophied ligamentum been resorted to. In one of these cases the result has been fairly good, and in the other not only a failure, but the patient has actually been made worse.)

TOTAL PROTEIN

What is the value of the total protein determination of the spinal fluid? This has much the same value as air myelography. A total protein of 40 mg. or greater is confirmatory evidence of the presence of a herniated disc. A lack of increase in the total protein, however, is of no significance. This brings us back to the same uncertainty of diagnostic value. Total protein determination can be used as a guide in this manner. Let us say that the clinical history and findings are equivocal, and one feels that the chances are at least ninety per cent in favor of the lesion. In such a case a spinal puncture with estimation of total protein may be the determining factor in the decision as to whether or not lipiodol should be injected. If the total protein is forty mg. or more, lipiodol injection is probably warranted. If it is not increased, evidence in favor of disc must become stronger before lipiodol should be injected.

Another question arises frequently and that is *who shall operate on these cases? Is it an orthopedic or neurologic procedure.* Naturally, I am biased in my opinion on this subject, being a neurosurgeon, and, therefore, it follows that I should justify my opinions if possible.

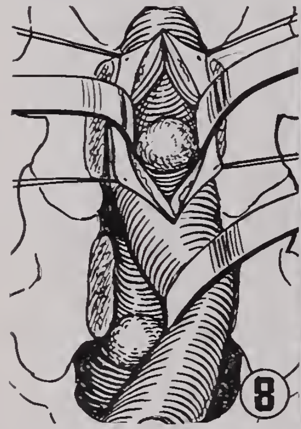
Since the vast majority of these cases are now taken care of surgically with the removal of a minimum of bone and in many cases no bone at all, the orthopedist's claim to this type of surgery by virtue of the fact that it entails a laminectomy has ceased to be tenable. Furthermore, the pathology to be dealt with has to do with the spinal canal and nerve roots, and in many instances entails also removal of lipiodol from the spinal canal. This certainly lies within the province of the neurosurgeon.

In the surgical treatment of years ago, where wide and generous laminectomies were done, it was necessary to do fusions at times, and in these cases the best mode of procedure undoubtedly would be to have the operation done by an orthopedist and a neurosurgeon cooperating, the orthopedic surgeon to handle the bone work and the neurosurgeon to deal with the lesion. However, fusions are becoming less frequent, and at present the operations do not weaken the back, and certainly fusion is indicated in very few instances. There is no law, of course, to prevent the orthopedic surgeon from operating on these cases. The objection to it, however, is the fact that most of them feel that fusion should be done, and since this is the case they are apt to fuse the majority of their cases, and in many instances fusions are done without removing the actual pathology.

FUSION

Is it necessary to perform fusions? The answer to this is very positively *no* in the majority of cases. Frequently one hears fusion advocated as a treatment in this type of case without removal of the pathologic process. While it is probably true that occasionally a fusion will allow for regression of the hypertrophied ligaments and even the herniated disc, thus producing a cure, it is certainly a radical procedure with a long hospitalization to substitute for the relatively innocuous procedure and very short hospitalization necessitated by simple removal of the disc. It has been my fortune, or rather let us say misfortune, to have encountered three cases where fusions have been done over an underlying herniated disc. These patients were not only unimproved but actually made worse by the fusion. I say that it has been my misfortune to encounter these because of the fact that it was necessary to "blast" through a previous fusion in order to reach and take care of the pathology, a procedure which I found to be very difficult and tedious.

There are instances when it is wise to combine removal of pathology with a fusion, namely, in those cases where there is congenital deformity and weakness of the back in an individual whose livelihood depends upon hard labor, and it is particularly true if there is a horizontal sacrum present. In these cases fusion probably is the wise thing to do, but only after the offending pathology has been removed. In these cases the procedure should be a combined neurosurgic and orthopedic operation. While it is undoubtedly true that the orthopedic surgeon can remove discs and in most instances deal with the pathology successfully, it is also true that the neurosurgeon can do a fusion. I feel that the orthopedic surgeon can do a better fusion than I can, and by the same token I feel I can deal with the pathology better than he can. It would seem to me, therefore, that the patient gets the best "break," if the operation is a combined one when fusion is necessary, and a neurosurgic one when fusion is not necessary.



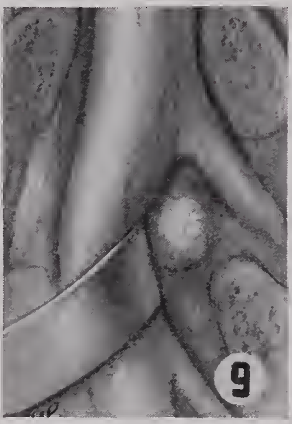


Fig. 8. Schematic drawing showing extradural and transdural approach with laminectomy.
Fig. 9. Operative sketch of early cases showing disc before removal following laminectomy.

SURGICAL TECHNIC

We now come to the surgical procedures indicated in treatment of these cases. There are four types of operations which may be used:

1. *Laminectomy, preserving articular facets.* This type of operation should be reserved for those cases having a very large defect in the midline, extending well over to both sides. There is sometimes not sufficient space between the spinous processes and laminae to remove these large lesions without performing a laminectomy, but it should be reserved only for this type of case. Even these may be dealt with by partial removal of the spinous process and partial laminectomy above and below, leaving the arch intact, at least in a portion of itself (figs. 8, 9, 10).

2. *Hemilaminectomy.* This operation should be reserved for large defects on one side, where the space between the laminae is so small that partial laminectomy does not give sufficient exposure. Here, again, the articular facets should be preserved (fig. 11).

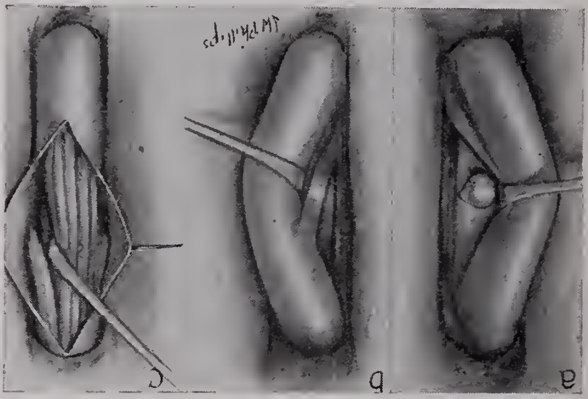
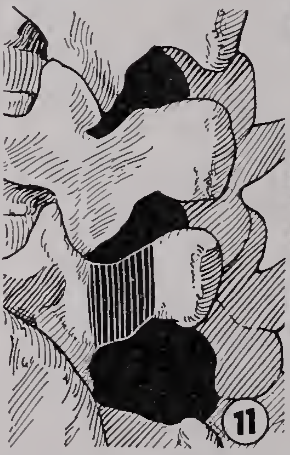


Fig. 10. Operative drawing of early case with laminectomy: a shows disc herniating after nerve root is retracted and longitudinal ligament is cut; b shows nerve root riding over herniated disc; c shows edematous nerve exposed after disc had been removed and dura opened to remove lipiodol.



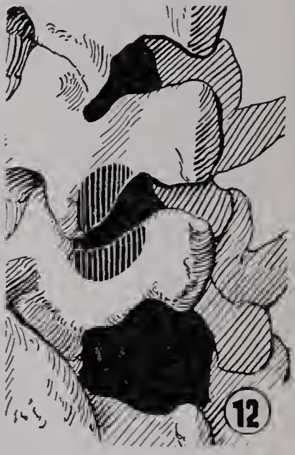


Fig. 11. Schematic drawing showing amount of bone removed in hemilaminectomy.
Fig. 12. Schematic drawing showing minimal laminectomy, removing small portion of lamina above and below the lesion. This is the usual type of operation now done.

3. *Partial Laminectomy.* This is the operation employed in most instances where a unilateral lesion is present. This constitutes the type of operation used most commonly in my own practice. The interlaminar space is enlarged as far as possible by placing the patient on the operating table in the optimal position so as to widen the interspace. This can be done by breaking the table with the patient

on his abdomen or by placing him on his side with sand bags under him. Then a very small amount of bone is removed from the laminae above and below the interspace in question. Usually the amount of bone removed is considerably less than one-fourth of the width of the laminae. Sufficient bone is removed in this manner to get adequate exposure for the removal of the disc (figs. 12, 13).

4. *Removal of Disc Without Removal of Any Bone.* This can be done by placing the patient in the same position as above described in cases where the interspace is adequate and the lesion is small. This operation is the ideal one and should always be attempted, but it is not possible to do this in all instances. In such a case the third type described is the operation of choice. As a matter of fact, it does not materially weaken the back any more than if the operation is done without removal of any bone whatsoever (fig. 14).

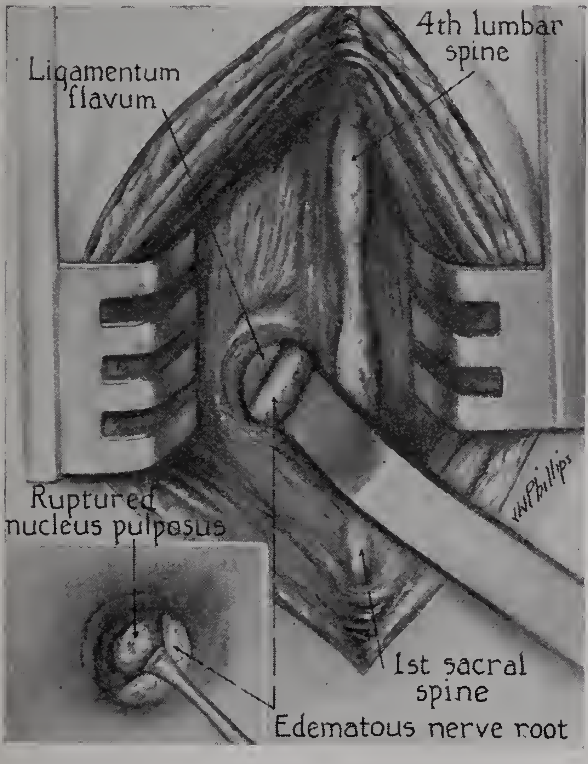


Fig. 13. Operative sketch showing minimal laminectomy as in fig. 12. After removal of the ligamentum flavum and retraction of the nerve root the large herniated disc was found lying free.

At times it is wise to remove the disc by a transdural exposure, in other words, opening the dura, retracting the nerve roots, and removing the lesion through an opening in the anterior leaf of the dura rather than going extradurally. This is particularly true where the lesion is practically midline, and at times this procedure is followed even where exposure is adequate, and where dealing with the lesion extradurally proves to be extremely difficult due to vascularity. The varicose veins which so frequently interfere with removal of discs may at times cause a great deal of difficulty to the operator, and it has been my experience, when I realize that the difficulty of an extradural removal is going to be too great by virtue of the varicosities, that I am better able to remove the discs transdurally and thus avoid hemorrhage entirely. This is due to the fact that these varicose veins tend to lie laterally in the spinal canal rather than toward the midline.

If lipiodol has been injected, it may be advisable to open the dura and remove it. If the disc is in the lumbosacral interspace, it is usually a simple matter to remove most of it. Where the lesion is in a higher interspace it is not uncommon to find lipiodol postoperatively, even though an attempt has been made to remove it all. In my experience the presence of lipiodol in the spinal canal after a successful removal of the lesion has never caused any untoward symptoms.

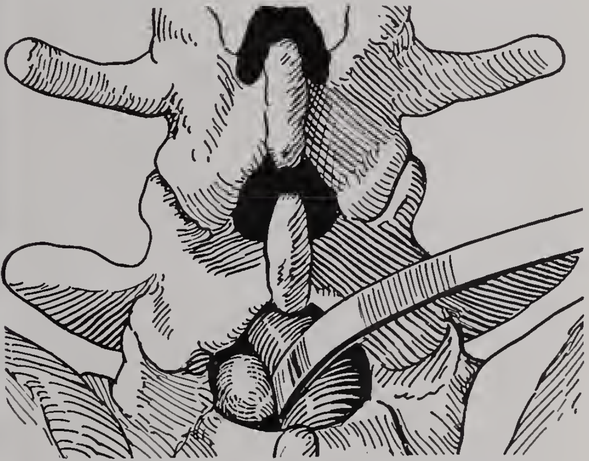


Fig. 14. Schematic drawing showing ideal approach for removal of disc. No bone has been removed. This can be done when space between the laminae is adequate for exposure of the disc.

In this connection Spurling states that trauma to nerve roots and meninges incident to opening the dura for removal of lipiodol is more apt to cause trouble than leaving it alone. He does not remove it. While I am inclined to believe this is true, for psychologic reasons it might be wise to lead the patient to believe it has been removed.

RESULTS OF SURGERY

What Are the Results of Surgery? If one reads the literature he is apt to come to the conclusion that all that is necessary is to operate on these cases and they are immediately cured. It is not so simple.

In attempting to evaluate the results of surgery our cases must be divided into two classes, those in which there is a compensation element and those without. We will first deal with results in compensation cases and get the "bad news" out of the way.

The things that hold true in evaluating results in this type of case in my experience hold true for practically all types of surgery performed for the relief of compensable cases. The "batting average" is low, regardless of the type of treatment instituted. In evaluating these cases we are taking only those done up to the first of January, 1941, which gives us a sufficient follow-up period correctly to evaluate the results. Of forty-six cases, twenty-two were compensation ones. Seven, or 31.8 per cent were classed as cured. Among these there were three in which fusions were done. Seven cases, or 31.8 per cent were classed as 50 per cent or more improved. Eight cases, or 36.4 per cent, were classified as complete failures. In other words, in my series of cases one out of every three was cured, one out of three was improved 50 per cent or more, and one out of three was a complete failure.

It is obvious that, when we are dealing with compensation cases, anything less than a practically complete cure must be classed as unsatisfactory, and, therefore, we must put those cases in the fifty per cent or more improvement class together with the failures in order to estimate satisfactory results from the standpoint of the compensation boards. When we estimate it in this fashion, we find that in compensation cases only one out of three has had a satisfactory result. This is really better than I expected because it has always been my impression that about the best we can hope for in surgery of compensation cases is one satisfactory result in four. This is certainly not a result to be proud of, nor is it one conducive to much enthusiasm on the part of the authorities involved.

When we carry the analysis of the eight failures a little further, we find that in five of them no disc was found and a diagnosis of hypertrophied ligamentum flavum was made, whereas in the seven cured cases we find that six had herniated discs. The results in compensation cases are not dependent on the type of operation or the surgeon's ability, nor entirely the lesion itself, but are very much dependent upon the psychology of the individual patient. Since finding that my results have been anything but gratifying in these cases, I have been making a definite effort to evaluate the patient's personality and psychology to determine if possible whether or not he is the type of individual in whom we could hope for a good result. Since this effort has been made I am finding that, while my "batting average" is far from perfect, my percentage of failure is definitely becoming less. I see many patients who are undoubtedly candidates for a herniated disc in whom, by virtue of their evident compensation neurosis, I feel there is no advantage to be gained in investigating them further, feeling quite sure they will not be cured regardless of what is done for them. If we rule out the poor psychologic risk and the protruded as differentiated from the herniated disc, our results should be infinitely better.

When I analyze my private cases, in which no element of compensation is present and in which the major consideration is the desire to be cured, then I find an entirely different story. There are twenty-four cases in this group. Twenty-two, or 91.7 per cent, are cured; two, or 8.3 per cent, are definitely improved, and there are no failures. The two cases not classified as cured were those in which no disc was found, and a diagnosis of hypertrophied ligamentum flavum was made at operation.

All of the twenty-two cured cases had herniated discs, with or without associated hypertrophy of the ligaments. In other words, the two unsatisfactory cases out of twenty-four were both cases in which an operative diagnosis of hypertrophied ligamentum flavum was made and no herniation of the disc was found. Therefore, I can state definitely from these figures that when I find herniation of a disc at operation in a private patient I can be certain that he will be well when the disc is removed. If I do not find a disc and am forced to fall back on the diagnosis of hypertrophied ligamentum flavum I can be almost as sure that that patient will not be well,

I might modify this statement with a reservation. A recent case not included in this series was found to have a tremendous hypertrophy of the ligamentum flavum which extended completely under the lamina of the fourth vertebra from the third to the fourth interspace with almost complete obliteration of the dural canal as shown by lipiodol studies. While it is too early to be definite, this man is apparently cured. This constitutes one of the two cases that I have had where a diagnosis of hypertrophied ligament only was made, and where I was satisfied there was sufficient hypertrophy of the ligament to account for the patient's symptoms.

In my first fifty cases, nine had only hypertrophied ligaments which is entirely too high a percentage, most of these being in my early cases. Of these only two have had a satisfactory result.

(In the past ten months twenty cases not included in this report have been operated upon. Of these there have been only two in which no disc was found. The percentage of cases, therefore, in which I have had to fall back on a diagnosis of hypertrophied ligaments has been reduced to ten as compared with 18 per cent in my first fifty cases.)

UNTOWARD RESULTS

While I have seen no reports in the literature regarding untoward results following the operation for herniated disc, I am sure that I am not the only one who has had bad results. I am not referring to unsatisfactory results, as I have certainly had plenty of these, most of them occurring in compensation cases. I am referring to those cases in which the end-result has been most unsatisfactory in that the patients have had additional disability as a result of the operation. Only the first of these is included in the statistics, the others being cases done in the past ten months and not included.

Case 1. I have had one case with a really tragic outcome. Following the removal of a herniated disc in the fourth lumbar interspace this man made a good recovery. He was entirely free of pain and disability until about fifteen days after the operation, when the back of a wheel chair in which he was sitting fell down, and he fell over backward, catching himself on the arms of the chair with his hands. Immediately he had a recurrence of all of his pain in the back with radiation into the extremities. I felt that he had probably strained some of the ligamentous and muscular structures, and he was discharged from the hospital about four weeks after the operation. During the next nine months he received a great deal of physical therapy, diathermy, etc., but made no improvement.

Since roentgenograms showed insufficient lipiodol remaining for diagnosis, he was reinjected. There was a complete block at the second lumbar interspace, and I felt that I was dealing with a large recurrent disc. Operation revealed an extensive arachnoiditis. All of the roots of the cauda equina were fused together into one cord-like mass with adhesions of the arachnoid to the roots and the dura. It was impossible to separate the roots without doing a great deal of damage. This man's disability has increased. He has very little use of his left leg, and not much more of the right. He is considered a total permanent disability.

Since practically all of the lipiodol had been removed at the first operation it does not seem reasonable that I can blame it for what happened. The only explanation that I have to offer is that this man did have a frankly infected wound which drained for a considerable length of time, and I feel that in all probability this infection extended into the subarachnoid space and was the cause of the adhesive arachnoiditis.

Case 2. A woman forty years of age, who had had a great deal of pain in the back and down the left leg without a definite neurologic picture, was diagnosed as a herniated disc by lipiodol. At operation a slight protrusion of the disc was found with markedly hypertrophied ligamentum flavum. The fifth lumbar nerve root was tremendously enlarged and seemed to be very tight in the intervertebral foramen. After removal of the ligament and the protrusion of the disc, the intervertebral foramen was uncovered well laterally to free this hypertrophied root. The lipiodol was not removed, as I suspected that we had not found the entire pathology.

She was discharged from the hospital after about two and one-half weeks, but continued to have severe pain and disability. Fluoroscopic examination and plates showed the deformity in the lipiodol column to be even more marked than it had been previous to the operation. She was again explored, and except for a great deal of scar tissue which one would expect following such an operation, no protrusion or herniation of the disc was found, but the nerve root was even more hypertrophied than it had been at the previous operation.

The bone was removed following the nerve root through the intervertebral foramen, and I found a fusiform enlargement which I felt was a tumor of the nerve or posterior root ganglion. The sheath was opened and this suspected tumor extruded itself. A small piece was removed for diagnosis, but no tumor tissue was found. The nerve sheath was left open. Then the dura was opened, the lipiodol removed, and the sensory portion of the root severed. This patient has made very little improvement. She continues to have a great deal of pain and disability, and if she is improving it is a very slow process.

I feel that whatever the fundamental pathology is in this case I failed to discover it. The deformity in the lipiodol column was undoubtedly caused by the enlarged nerve root.

Case 3. A man fifty years of age with a very large herniation of the disc in the third lumbar interspace was explored, and the disc found to be almost in the midline, nearly obliterating the spinal canal. Because of its size and position it was felt advisable to do a transdural removal through the midline. The roots of the cauda equina were retracted laterally on each side and the large herniation removed transdurally.

This man was entirely relieved of his pain, but complained of numbness of his foot. This is not uncommon for a few weeks after the operation. In addition to the numbness, however, he had a right foot drop postoperatively. These findings were undoubtedly due to the severe retraction of the nerve roots incident to the removal of this large lesion intradurally, and I felt that this would undoubtedly recover as time went on. Fifteen months have elapsed and while this man has been entirely relieved of his backache and sciatic pain, there has been no apparent recovery of the foot drop or the anesthesia.

Case 4. There has been but one death in my series. This was a young man who was operated on in another city. Ether anesthetic was used, and during induction he quit breathing for several minutes, but he was resuscitated and the operation was continued with apparently no untoward symptoms. The disc was easily removed, there was no excessive bleeding, and no reason to expect trouble. The operation did not consume over an hour's time. The following day, some twenty-four hours after the operation, the man expired without regaining consciousness.

The only explanation of his death that I can think of is that he probably had a cerebral hemorrhage during the induction of the anesthetic or during the operation. There was certainly nothing in the operation itself which could account for his death.

SUMMARY AND CONCLUSIONS

The frequency with which a man in general practice diagnoses intervertebral discs is directly dependent upon his ability to recognize, first, the clinical history which is so typical; and, second, the clinical findings which are so simple. If he is cognizant of these factors, he will see herniated discs; if he is not, he will not recognize them.

The history of these cases is very typical. Many of them have had a definite back injury. A history of recurring low-back pain with or without sciatic reference should always make one suspicious of herniation of the intervertebral disc.

By far the greater portion of cases having herniated discs may be relieved by conservative measures without resort to surgery. Of special interest in this regard is the fact that epidural injection of saline or novocain may relieve symptoms in early cases who have the classical findings of herniated disc.

While the diagnosis of herniated disc can be made almost positively on the history and clinical findings, it is extremely difficult definitely and accurately to localize the lesion to a given interspace without the use of a contrast medium, either air or lipiodol. While air is satisfactory in some instances, it allows for a considerable margin of error. A negative air does not rule out a lesion nor does a positive air always tell the entire story.

The only contraindication to the use of lipiodol is in compensation or medicolegal cases. I have never seen a case where this element was not present that has had any untoward symptoms as a result of intraspinal lipiodol injection, whether it has been removed or allowed to remain.

If a contrast medium is not used, the diagnosis and localization may be made in many cases, but the percentage of error will be increased, and it will often be necessary to explore several interspaces before finding the lesion which could have been located in the proper interspace, had lipiodol been used.

One should differentiate between herniation and protrusion of the intervertebral disc. I believe that herniation is always acquired and is due to injury, whereas protrusion may be congenital and not due to a specific injury or injuries. True herniation of the disc is most apt to be a single lesion; protrusion is apt to be a multiple lesion. They can usually be differentiated by means of lipiodol study.

Hypertrophy of the ligamentum flavum per se is rarely, if ever, the cause of low back pain and sciatica. It is frequently found in association with congenital defects of the bony structure of the lumbar vertebrae and the sacrum, particularly horizontal type of sacrum, and where these cases are operated upon it is usually wise to fuse them.

Spinal fusion becomes necessary in a small percentage of cases, where herniation of the disc is removed. Other than those cases mentioned in the preceding paragraph, it is rarely necessary, particularly if the newer conservative types of surgery are employed.

Out of twenty-two operations in compensation cases, seven, or 31.8 per cent, were cured; seven or 31.8 per cent were improved fifty per cent of more, and eight or 36.4 per cent were failures. Of the eight failures five were diagnosed as hypertrophied ligamentum flavum without discs, whereas six of the seven cured cases had herniated discs.

Out of twenty-four private cases, twenty-two or 91.7 per cent were cured; two or 8.3 per cent were definitely improved, and there were no failures. All of the twenty-two cured cases had herniated discs with or without associated hypertrophied ligaments. In the two cases that were not cured a diagnosis of hypertrophied ligamentum flavum was made and no disc was found.

There is probably no field in modern surgery where so many errors are being made, both on the positive and on negative side, as in that of herniated disc and hypertrophied ligamentum flavum. Many cases which should be operated upon remain undiagnosed, and many cases are being subjected to surgery either on mistaken diagnosis or without the benefit of sufficient conservative treatment.

TORSION OF SPERMATIC CORD*

REPORT OF CASE

Edgar N. Layton, M.D.
COLFAX, WASHINGTON

Accidental rotation of the spermatic cord to the extent of strangulation is a rather rare occurrence. The first recorded instance was probably observed by Delasiauve in 1840. Up to 1904, Vanverts was able to tabulate only forty-four cases and in 1919 O'Conor, after a careful search of the literature, found records of 124 cases. The rarity of the condition is thus well established.

ETIOLOGY

Authorities generally agree that torsion rarely, if ever, occurs in the normal testicle and some congenital anomaly is often, if not always possible to demonstrate. It occurs most frequently between the ages of fourteen and twenty-five.

Howard advances the following theories as to the cause of the accident: (1) abnormal attachment of the common mesentery to the lower pole of testis and globus minor; (2) elongation of the globus minor; (3) capacious tunica vaginalis, permitting excessive mobility of the testis. Why any or all of these anomalies should result in or cause strangulating rotation of the cord is not made clear. Most writers say "the direct cause of the condition is unknown," a statement with which I feel sure most of us will agree.

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*Read before a Meeting of Walla Walla Valley Medical Society, Walla Walla, Wash., March 12, 1942.

SYMPTOMS

Symptoms are pronounced and violent. The onset is usually sudden and stormy, although in the recurrent type the attack may be less severe. There is increasingly intense pain on the affected side, extending from the lower quadrant of the abdomen downward into the inguinal region and to the cord and testicle, usually but not always becoming rather sharply localized in the latter region. After some hours testicle and scrotum become firm, edematous and so excessively tender that more than a cursory examination is impossible. Swelling extends throughout the inguinal region and may often be most intense at the external ring. Nausea is the rule and vomiting frequently occurs. There is marked shock and the temperature is generally somewhat elevated. Sluggishness of the bowel, probably due to increased pain attendant on straining at stool rather than evidence of obstruction, is generally present. There is apt to be an increase in the white blood count to 8,000-12,000.

PATHOLOGY

A small amount of fluid is found in the tunica vaginalis, often bloody in character. The testis is firm, swollen and discolored, in direct proportion to the degree and duration of the torsion, often being entirely black. The spermatic cord is normal above the constriction and thrombosed below it, and in the twisted portion there will be found from two to six turns of the twisted cord. The amount and degree of swelling probably depend upon whether both the artery and vein were occluded at the same time, or the vein first and the artery somewhat later.

DIAGNOSIS

Often diagnosis is not easy, since the condition presents all the findings of strangulated hernia and this is the diagnosis usually made before operation. In hernia the pain is not apt to be localized in the region of the testicle. Intestinal obstruction presents its classic symptoms. There is more shock, at least early, and obstipation is characteristically complete. Epididymitis or trauma are both to be considered and an opinion leaning toward either of these conditions may cause tragic delay. When torsion occurs on the right side, appendicitis has to be considered. Some cases have been so diagnosed. A careful exclusion is mandatory. In appendicitis the pain is apt to be localized higher in the abdomen, with characteristic tenderness at McBurney's point and the white blood count is higher, with typical differential ratio. At the very onset, a definite diagnosis may be extremely difficult.

TREATMENT

Some writers have believed that detorsion without open reduction is possible. This generally causes only unnecessary delay, trauma of parts whose vitality is already reduced and may set up avoidable complications. When the twisted cord is released, its circulation may become restored, either rapidly or more slowly. If, however, the strangulation has been sufficiently tight and of long duration, if the cord and testis do not regain their normal color within five or six minutes, the testis will undoubtedly have to be sacrificed. In some cases which have been operated upon quite early, gangrene or atrophy have resulted.

Some authors believe that, if the constriction is released and the torsion reduced as early as seventy-two hours after the accident, the testis may be saved. Thorek says: "I do not think that any arbitrary rules can be laid down. The findings must be the surgeon's guide, no matter how long the torsion may have lasted." Balch says: "If the case is seen immediately, an attempt may be made to untwist the cord and save the testis. After two or three hours, however, removal of the testis is called for, as it is sure to become gangrenous or to atrophy." Lejars states that a portion of the testis, which appears safe and has been retained, often may slough and subsequently be eliminated; it is advisable, in case any portion of the organ appears to be in doubtful condition, simply to drain the sac and leave it open. Scudder reports that 88 per cent of the cases he found recorded resulted in gangrene of the testis. All of which indicates that we should be on the alert regarding this rare accident; it may be difficult at times properly to diagnose the condition, and prompt surgical measures are imperative.

REPORT OF CASE

J. T., a tall, slender boy of 14, has had appendectomy and tonsillectomy; he has also had recurrent attacks of otitis media, resulting in a rather large hiatus in right tympanum. During the past several months he has had two or three attacks of rather severe pain in the left groin, which disappeared in an hour or two after rest and use of hot fomentations. At six o'clock on the morning of July 30, 1941, he was awakened by a similar attack of pain in the same region which gradually became more severe, radiating upward on the left side of the abdomen as high as the umbilicus but most marked in the inguinal region. The left testicle was excessively tender especially in the upper portion and was slightly swollen. The cord was very tender and swollen and a distinct, isolated mass was apparent in the inguinal canal. There had been frequent vomiting.

Diagnosis of strangulated left inguinal hernia was made and the patient placed in hospital. Under gas-ether anesthesia, a herniorrhaphy incision was made, but no hernial sac was encountered. The upper portion of the cord appeared normal and the inguinal ring was closed. A large mass, showing bluish through its covering tunica vaginalis, presented in the lower portion of the incision. This mass was carefully incised, exposing the strangulated cord and testis, the former being twisted on itself four complete turns. The testis was drawn up out of the scrotum and the torsion untwisted. Warm saline sponges were placed about cord and testis. In two or three minutes, the deep bluish-black color began to fade and the normal color rapidly returned as the circulation was restored. The testis was replaced in the scrotum, the cord sutured to the tunica with interrupted 5-0 chromic catgut. The incision was closed in layers without drainage, and the usual dressings, with scrotal support, applied.

The patient made an uninterrupted recovery, left the hospital in ten days and returned to school the first of the present September. To date, there is no evident atrophy of the testis.

UNUSUALLY LARGE DOSE OF SULFATHIAZOLE

REPORT OF CASE

Charles E. Conner, M.D.
CASHMERE, WASH.

The following is the report of a case of lobar pneumonia, in which, by mistake, an unusually large amount of sulfathiazole was given over a short period, followed by complete recovery.

R. H., 25 year old white male, was admitted to the hospital on December 30, 1941, at about 9:30 p.m., complaining of cough, dyspnea, weakness and fever. He had not felt well for two weeks, thinking he had the "flu," and had been staying home from work, treating himself with mustard plasters, cough syrups, etc. By December 29 his cough began to weaken him considerably and he developed a chill and perceptible fever.

That evening his wife called me to see him in the home. I found him quite weak from severe cough, productive of very large quantities of a mucopurulent sputum. Temperature was 101.4°, pulse 80, chest findings only those consistent with a severe tracheobronchitis. He was, however, given sulfathiazole, 2 grams to begin with, and then 1 gram every four hours, besides palliative measures. Next morning the patient felt very much better. By that evening his condition had become very much worse and he was brought to the hospital, having become so weak from coughing he could hardly hold his head up.

The family history was not relevant. Past history revealed one other attack of influenza but nothing else except diseases of childhood.

On admission to the hospital physical examination showed the patient to be desperately ill, pale, cyanotic, having frequent spasms of severe coughing which left him exhausted. The cough was often followed by a whoop, not unlike that heard in pertussis. Temperature was 101.8°, pulse 120, weak and thready, blood pressure 98 systolic, 64 diastolic, respirations 38 per minute. Head and neck were negative except for circumoral pallor, accentuating the moderate cyanosis of the lips, and mildly inflamed pharynx.

Examination of the chest revealed some limitation of motion on the right side. Percussion note was dull over the right lower lobe, where a few fine crackling rales could be heard. Rhonchi were heard over the entire chest. There was no evidence of pulmonary parenchymal involvement other than in the right lower lobe. No friction rub was heard. Examination of the abdomen and the rest of the body was essentially negative.

At this time there were 4.8 million red blood cells, 76 per cent hemoglobin, 19,250 leukocytes, of which 93 per cent were polys and 7 per cent lymphocytes. Urine showed a specific gravity of 1.027, acid, negative for albumin and sugar, and only a few epithelial cells in the microscopic. Sputum was now blood-streaked and was found to be teeming with what appeared to be almost pure culture of a long-chained, gram-positive coccus, occasionally occurring in pairs and not reacting to any of the pneumococcus typing sera. Admission chest film showed pneumonic consolidation of right lower lobe.

Administration of nasal oxygen was begun on admission. This seemed to give the patient some relief from his dyspnea. Then, besides routine orders, sulfathiazole was ordered. It was here that the difficulty began. Instead of two tablets (one gram) every four hours, the patient got the prescribed dose every *half* hour!

His condition the following morning was about the same except for more weakness. He was taking fluids to the extent of over 4000 cc. daily, perspired profusely, was not nauseated, and felt fairly well except when coughing. At this time, because of weakness and perspiration, one cc. eschatin intramuscularly was ordered overy six hours. Temperature, pulse and respiration were essentially the same as the night before.

In the afternoon, because of the persistent temperature and because there was obviously no improvement in the patient's condition, three grams of sulfathiazole were given intravenously, without reaction of any kind. By evening his strength had improved slightly.

The following morning, while looking over the chart, the enormous dose of sulfathiazole was discovered. Upon careful check-up with the student nurses and supervisors of the floor, even with the supply from the drug store, there remained no doubt that the patient had received, in about thirty-six hours, 72 grams of sulfathiazole by mouth, plus 3 grams intravenously. He had vomited only once, this following a severe coughing spell.

There was no clinical evidence of toxic reaction to the drug. Cyanosis had improved. Temperature had come down to normal. Cough was less severe and less frequent. For all practical purposes the blood count remained the same, except later for a reduction of the white count towards normal (see chart). The urine now contained three to four pus cells per high power field, occasional coarsely granular cast, no albumin and no r.b.c.'s, although the technician was requested to look for these in particular (fig 1).

At the time of the discovery, administration of the drug was stopped entirely. From there on the course was one of rapid clinical improvement, with persistently normal temperature from the sixth hospital day on. Coarse rales were heard over the right lower lobe on the 3rd, 4th, 5th and 6th hospital days. Chest findings from then on were normal. No further chest film was taken. Physical examination and urinalysis were essentially negative on January 10, 1942, the day of discharge from the hospital. That day he was up and about, feeling weak but otherwise well.

COMMENTS

The case presented is, unfortunately, one from a country practice in a rather small hospital, where laboratory procedures other than routine sometimes are not available. One wonders immediately what the level of blood sulfathiazole was. But the equipment for determining this was not to be had and we may only guess at the figure. If the level was high, then the patient tolerated the drug very well.

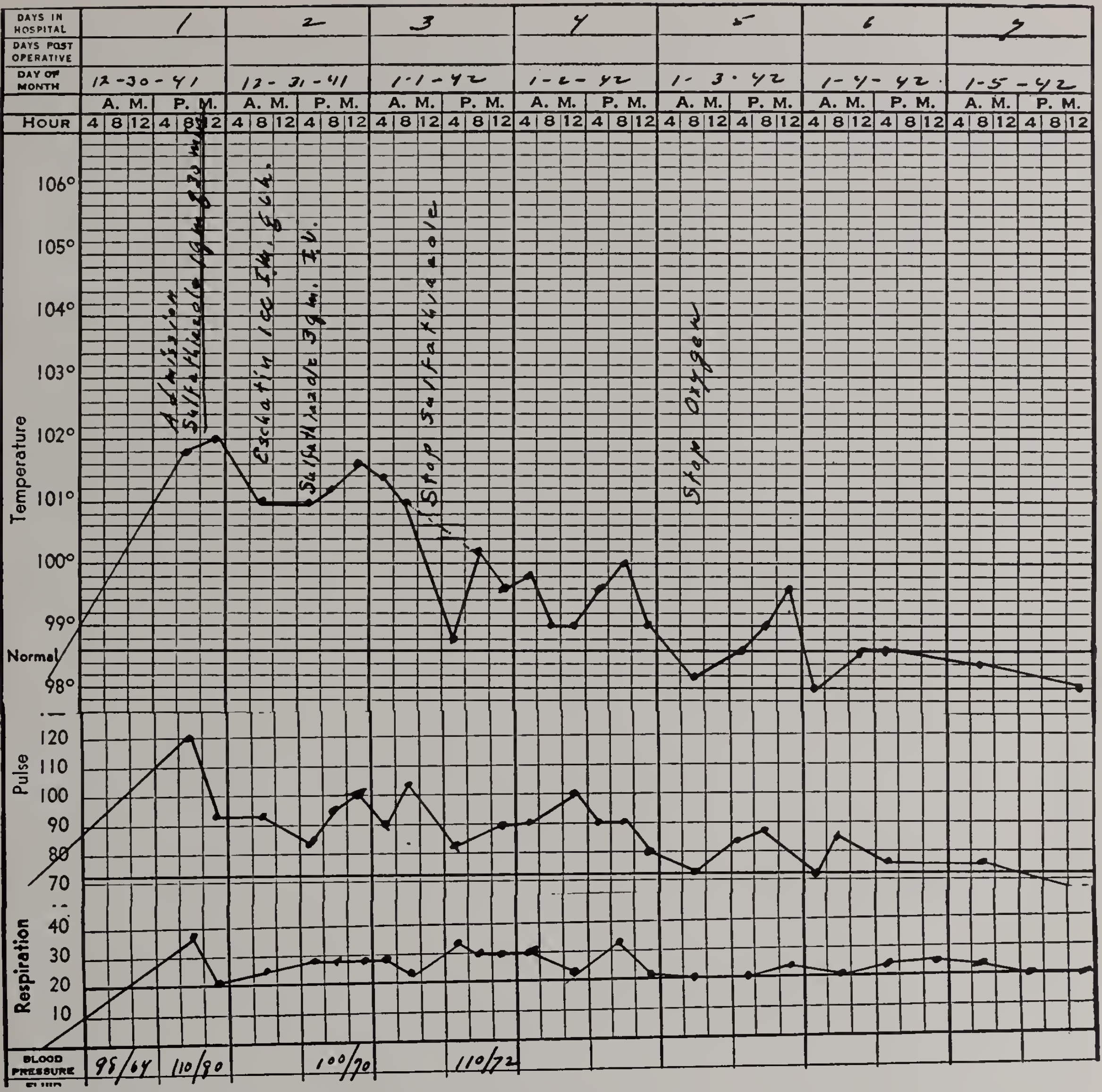

Fig. 1. Chart shows progress of case with results from sulfathiazole.

If the level was low, certainly there was little absorption, as there was ample opportunity for this.

From a clinical standpoint, I cannot say that the high dosage of sulfathiazole had any unusual effect on the course of the pneumonia. It seems most likely that the patient got along about as well, or as poorly, as he would have on a more reasonable dose. The course of the disease was about what one would expect of a pneumonia with such a severe bronchitis.

From a laboratory standpoint the case is an example which a well-equipped institution would like to have. It is unfortunate that more laboratory data were not available. At least there was no appreciable effect on the blood picture and only a transient and unimportant effect on the urine.

There seems to be a growing sentiment that, of the sulfonamides, at least sulfathiazole and sulfadiazine are less toxic than at first supposed and one may use without fear much higher doses than before. The general effectiveness of such higher doses I do not know.

CONCLUSIONS

1. In one instance an extremely large dose of sulfathiazole over a thirty-six hour period did no appreciable harm to the patient.

2. The large dose in this case did not affect the clinical course of the pneumonia any more than an average dose might be expected to do.

PREMALIGNANT LESIONS OF COLON, RECTUM AND ANUS*

E. D. Parkinson, M.D.
BOISE, IDA.

Carcinoma of the colon, rectum and anus amounts to 15 per cent of all human malignancies. Sixty to 100 per cent of malignancy of these areas, according to various authorities, develop from premalignant lesions which can be visualized, diagnosed and treated in the premalignant stage. Most of these can be successfully eliminated.

Aside from the skin and oral cavity, premalignant lesions have heretofore rarely been eliminated as such. Yet the same hyperplastic tendencies which produce a hyperkeratosis of the skin with advancing age seem to be active in producing hyperplastic changes in the bowel and elsewhere. Increasing cancer consciousness and new methods will tend to the discovery and elimination of more lesions which are precancerous. Urethral caruncles are potentially malignant lesions. These, however, do not often degenerate. Polypi of the urinary bladder are almost surely premalignant. In fact, these lesions have more often become maligmant when first seen than otherwise.

The same is not true of polypi of the colon and rectum. While these lesions are definitely premalignant, they always exist in a benign state for a relatively long time and frequently produce signs and symptoms of their presence while benign. Since large bowel and rectal carcinomata are high in incidence, since the majority probably develop secondarily from a preexisting benign lesion and since these can be recognized early and treated successfully, the necessity of their early recognition and treatment becomes obvious.

Polypi of the colon and rectum occur most often in the distal portion of the tract. They may occur as discrete single lesions but often are multiple. Multiple polypi usually occur in a localized bowel segment but may be arranged as discrete lesions in several areas. The type of polypoid disease which is sometimes observed in children and believed to be familial and that resulting from healing of ulcerative lesions are likely to cause a more generalized involvement. Since these generally distributed polypi involve a larger bowel area and are just as liable to degenerate, they are obviously more difficult to eliminate and constitute, therefore, a more serious prognostic state from their malignant possibilities alone.

Although polypi are more common actually than cancer of the bowel and rectum, there is still more cancer treated over the country as a whole than are polypi. Yet the benign precedes the malignant lesion. In well organized clinics, however, recognition and treatment of polypi exceed greatly that of actual carcinoma. At the Mayo Clinic one out of every thirty-five patients examined, as reported by Buie, had one or more polypi visible through the sigmoidoscope. Only eight of each thousand who enter the clinic have a diagnosis of carcinoma of the colon, rectum or anus. Autopsy findings from various sources show the presence of polypi in 14 to 18 per cent of all examined.

Since coming to Boise I have sigmoidoscoped forty-two patients. In six I have observed one or more polypi. Another patient who has bleeding has roentgen evidence of a polypus high in the sigmoid but I was unable to visualize it through the scope. This is one-sixth or 17 per cent which probably approaches the actual occurrence of polypi in all people, though this is a small number and not conclusive. Two of these patients had a proven cancer, one in the sigmoid, the other in the rectum. The rectal cancer was discovered in a polypus not over .5 cm. in size, biopsied as a routine procedure. The other carcinoma was discovered at operation after roentgen diagnosis of polypus. Four small nonmalignant polypi were present in the same bowel segment. The entire segment of the sigmoid was excised.

Carcinoma of the anal canal proper comprises 10 per cent of colorectal cancers. Polypi play no part in the origin of cancer in this locality. That precancerous and inciting lesions are important here has been proven. Rosser and Kerr report that "84 per cent of individuals with cancer in this area presented evidence of some such attendant and preceding disease." The conditions apparently giving rise to anal malignancy include fistulae, ulcer, hemorrhoids, anal papillitis and pruritis.

Both adeno and squamous cell cancers develop in the anus. Squamous cell tumors are the most common, since the anus is lined with squamous epithelium. It is conceivable that a malignant change may occur in the squamous cell tissue that extends above the pectinate line, where epithelization of the rectal mucosa occurs in irritative states and mucosal prolapse. Thus a squamous cell carcinoma of the rectum could be present. In contrast, when adenocarcinoma occurs in the anal canal, it usually originates from the small subcutaneous glands which are present and do not arise from mucosa.

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*Read before a Staff Meeting of St. Luke's Hospital, Boise, Ida., January, 1942.

Almost all colorectal polypi fall into a small group pathologically, whether they be of the familial type, originate secondary to ulcerative lesions or occur as discrete or segmental primary polypi. Adenomata are most common, comprising 60 per cent. Papillomata comprise something over 36 per cent, leaving a small percentage of fibromata, myomata and the like which are of little or no importance as premalignant lesions.

Adenomata and papillomata both exist as sessile and pedunculated lesions. As they increase in size and are subjected to the traction of the muscular activity of the bowel and passage of the stool, all benign lesions tend to develop pedicles. Lesions with broad base present slightly higher incidence of malignant degeneration. After infiltration has begun the tendency to develop pedicles is lessened and a tendency to ulceration is increased. This is due either to a nutritional deficiency of the epithelium in a rapidly proliferating lesion or greater susceptibility to trauma because of greater rigidity of the area.

As has been mentioned, premalignant colorectal lesions usually present some sign of their presence before a degeneration has occurred. Symptoms are not characteristic but are suggestive. Some bright blood, seen or mixed with the stool, has usually been observed by a patient with polypi. Almost as constant is the observation of passing excess mucus in the stool. A large villous papilloma, due to the large surface and increased number of globlet cells, may produce much mucus. Mucus and blood seen together are even more suggestive. While blood and mucus from the bowel do not always mean polypi by any means, it should be remembered that every condition in which they are present is important. Pain is seldom present. Vague distress in the left lower abdomen may be due to colonic hypertonus above or in the segment of the lesion.

Large polypi in the lower rectum cause tenesmus and a feeling of incomplete defecation. Some change in the bowel habit is not as frequent as in cancer, but tendency to an increased number of bowel movements without real pain or loss of weight may be due to polypi. The type of extensive generalized polyposis of the colon as seen in children produces marked symptoms. Underdevelopment, nutritional disturbances, pain, diarrhea and blood in the stool occur. Bleeding in this condition may become hemorrhagic. Yet patients are believed to have carried a generalized polyposis of the colon from childhood to adult life asymptomatically.

Carcinoma and ulcerative colitis are two diseases producing similar symptom pictures and these must be differentiated. Diverticulosis or diverticulitis should be considered. There is definitely little blood in the stool from these diseases and more bowel distress is the rule. Granulomatous lesions, as tuberculosis and fungous infection, produce symptoms like polypi and carcinoma. Polypi may occur as a result of these diseases and malignant degeneration result. It seems to make little difference what the origin of mucosal hyperplasia in the bowel, the probability of malignant change remains constant.

The locations of malignant lesions of the large bowel parallel very closely those of polypi, thus tending to support the contention that carcinoma so often develops secondarily. In a recent paper by Mayo and Schlicke locations of polypi were reported as follows, figured in approximate percentages: 9 per cent in cecum, 5 per cent in ascending colon, 9 per cent in transverse colon, 6 per cent in descending colon, 19 per cent in sigmoid, 12 per cent in rectum. Thirty-two per cent had polypi in several areas of the bowel and 6 per cent diffuse polyposis. In 2 per cent the location was not noted. Locations of malignant lesions of the colon and rectum are practically as follows: 15 per cent in cecum, 8 per cent in transverse colon, 7 per cent in descending colon, 23 per cent in sigmoid, 13 per cent in rectosigmoid and 26 per cent in rectum proper. The similarity in locations in the bowel is obvious and cannot be considered coincidental.

Histologically 83 per cent of colorectal and anal cancers are adenocarcinomata; 7.5 per cent comprise papillary and colloid cancers. The fact that there is a higher percentage of adenocarcinomata than simple adenomatous polypi is without significance, since almost all bowel cancers and bowel polypi originate from the mucosal layer of the bowel wall. The distribution of both conditions by sexes is practically parallel, being about 58 per cent male to 42 per cent female.

These facts establish the close relationship between polypi and carcinoma of the bowel and rectum. Fitzgibbon and Rankin[1] stated in their opinion that all colorectal cancer originates in preexisting polypi. Few of us ever believe so completely in anything, medical or otherwise. Suffice it to say, however, the majority of cancers of the large bowel and rectum do develop from preexisting benign lesions.

Methods of recognizing polypi have advanced recently as have those of eradication. Roentgenography is the most valuable method of recognizing polypi above the view seen through the sigmoidoscope. The use of double contrast methods, using first barium then air in the bowel, has made it possible to find many polypi which could not otherwise be found. Under the fluoroscope these lesions can sometimes be moved about and their identity made absolute. Fortunately the area of the rectosigmoid, being fixed and difficult to view with roentgen ray, is within reach of the proctoscope and direct vision.

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[1] Fitzgibbon, G. and Rankin, F. W.: Polyps of Large Bowel, Surg., Gynec. & Obst., 52:1136-1150, June, 1931.

It is not always a simple matter to recognize polypi through the proctoscope. They are frequently small and even though multiple can be located in the folds of the mucosa or hidden behind the valves of Houston. When one realizes the actual area of the mucosa of the lower bowel and rectum with all the folds smoothed out, one can see how difficult it is to view the entire surface through a small tube. Every attempt should be made to smooth out the mucosa and view it all. As little air pressure should be used as is necessary. The position of the patient is all important. Without the use of gravity to displace and aid in straightening the sigmoid, it cannot be viewed thoroughly.

The most effective and simplest method of eliminating polypi is use of electrocoagulation through the scope. Below the peritoneal reflection this procedure is pretty much without danger. One can burn too deeply and an ulcer or abcess develop but complications are infrequent. Above the peritoneal reflection burning too deep may result in perforation of the gut and all of its consequences. Here the practice of repeated small burnings is the wiser. Polypi on a pedicle, especially the larger ones, can be removed with the electric snare. Depth of coagulation with a snare is more difficult to control so, when used high, more caution is necessary.

The proven existence of a polypus which cannot be reached through the rectum is indication for laparatomy and opening the bowel to excise it. A segmental polyposis in an area not too large to exteriorise is indication for a Mikulicz procedure with formation of a spur. When larger areas of the bowel are involved, colostomy is done and the polypi treated by coagulation through scope in the colostomy opening, combined with treatment from below.

Colectomy has been successfully performed for generalized polyposis of the colon. This is done in stages, the first being establishment of a short circuiting enteroenterostomy around the bowel to be removed. Later the polypi below the anastomosis are coagulated through the rectum.

CONCLUSIONS

1. It is proven that the majority of malignant lesions of the colon, rectum and anus develop from preexisting benign lesions.
2. Sixty-five per cent of these lesions can be visualized and treated without opening the abdomen.
3. Present evidence indicates at least 14 per cent of people have colonic or rectal polypi.
4. Elimination of these lesions is cancer prophylaxis.

TREATMENT OF BRUCELLOSIS BY THE USE OF SULFAGUANIDINE*

Ewart S. Sarvis, M.D.
SUMAS, WASH.

For twenty years it has been known that the organisms of contagious abortion might cause human diseases, and voluminous has been the literature on the subject to date. Among other things we are told that three specific tests are available for the detection of brucellar infection[1] but in spite of this knowledge undulant fever cases are often erroneously classed as rheumatism, recurrent influenza or even neurasthenia. Parsons and Poston[2] have reported four cases which were diagnosed Hodgkins disease.

Keefer puts patients with undulant fever into three main groups: (1) patients who have fever without localizing signs and in whom the diagnosis is made by isolating the organism from the circulating blood or by the specific agglutination test; (2) patients who have an infection with localizing signs in various organs of the body, and in whom the diagnosis is made by isolation of the organism from foci of infection or by agglutination tests; (3) patients who have symptoms of an infection without localizing signs and without bacteremia or a positive agglutination reaction, and who show positive skin reaction to brucellergin and/or opsonophagocytic indices suggesting infection.

About 4,000 cases are reported annually in the United States with a mortality of 4-6 per cent and, although there may be severe prostration in the acute cases, it is the long drawn out cases that are more costly in physical discomfort and loss of time.

A brief consideration of the pathology of undulant fever before discussing treatment will remind us that the Brucella has been cultured from nearly every tissue in the body as well as from the blood. It is thought to reach the blood stream by way of the mesenteric glands and the thoracic duct.

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*Read before a Meeting of Whatcom County Medical Society, Bellingham, Wash., April 2, 1942.

[1] Calder, R. M.: Chronic Brucellosis. South, M. J. 32: 451-460, May, 1939.

[2] Parsons, D. B. and Poston, M. A.: Pathology of Human Brucellosis. South, M. J. 32:7-13., Jan., 1939.

Treatment, therefore, might be aimed at ridding the bowel of the organisms before the infection becomes generalized. While this would seem logical, the method has not proved practical because the onset of symptoms is the signal usually that the infection is either in the blood or is already widespread. Another stumbling block has been that heretofore no agent has been available that would give us that very desirable result.

In treatment of chronic brucellosis vaccines and Huddleson's brucellin have been most widely used, but in addition to questionable therapeutic value, many of these agents may provoke serious reactions, including temperatures of 104° to 106° and severe generalized discomfort. Carpenter and Boak[3] stated in 1936 that "as yet no therapeutic agent has been found which has been proved to alter, to a significant degree, the natural course of the disease," and very recently the statement was made by Keefer[4] that "a completely satisfactory remedy for brucellosis has not been found."

Chemotherapy today, however, is giving more promising results. The first case reported to be successfully treated with sulfanilamide was Thevenet's in 1936. The temperature became subfebrile in forty-one days and free from fever in another two or three weeks. Since then there have been numerous reports of cases in which there was prompt clinical improvement when maximum dosage was used, and the patients remained well. Equally good results have been obtained with sulfadiazine.

I should like to report here three cases with apparent cures from the use of sulfaguanidine.

Case 1. Dr. J. E. L., dentist, 34 years old. For the past two or three months has had intermittent fever with irritation in the lower abdomen and indefinite recurring pains in the back and extremities. The vision became blurred and new glasses were made for him, with little improvement. He had applied elsewhere previously for treatment where blood tests were made but not reported upon. About one month before admission his condition was diagnosed appendicitis, and on account of a suspicion that there was an accompanying genitourinary infection the urine was cultured. It was reported negative.

His fever and weakness increased and the agglutination test for brucellar infection was done and found to be strongly positive. Temperature at this time was showing a daily elevation to 101°-103°; pulse was 84, and white blood cell count was 6,500. There was considerable secondary anemia.

Sulfaguanidine was obtained two weeks after the diagnosis of undulant fever was made and administration was commenced with a dosage of 9 grams daily for six days. Temperature dropped at once and remained normal after the third day. Vision improved so that he was able to use his regular glasses with satisfaction. He was back in his office in ten days and has remained well since then, a period of ten months.

Case 2. W. H. was a butcher, 31 years old. On May 1 1941, he complained of not feeling well and had loss of appetite and fever. Temperature continued to rise and all symptoms were increased and he was admitted to hospital on May 13 with a positive diagnosis of undulant fever.

The maximum temperature ranged from 101° to 103° for a month, following the date of admission. On June 13 treatment with sulfaguanidine was commenced with a dosage of 9 grams daily for three days, when it was reduced to 3 grams daily. Temperature remained normal from the third day forward and the patient made an uninterrupted recovery.

Case 3. Miss M. E., school teacher, 21 years old, was in the hospital with a fractured leg in November, 1941. A slight temperature subsided at first and then began to rise again after the second week. No suggestion of symptoms were present but a catheterized specimen of urine taken during the third week was positive for colon bacillus infection. Following the administration of sulamyd the temperature subsided and a specimen taken two weeks later was negative for growth.

The conclusion at that time was that the fever had been due to the genitourinary infection. There was no return of the symptoms for two months and on January 8, 1942, she was in school and felt well. The next morning, however, she complained of having had a chill and examination revealed a temperature of 103° with pulse 92 and respirations 22. She looked sick, was perspiring freely, and coughing persistently. A tentative diagnosis of influenza was made. Two days later her temperature rose to 104° and remained high, and there was delirium. The peculiar rasping cough was diminishing somewhat and the patient complained of slight pain in the chest but physical findings were negative. Sputum and blood examinations were negative but no blood culture was attempted. The diagnosis was changed to pneumonitis.

Then, by the fifth day the cough had practically disappeared but the fever, prostration and delirium continued unabated. The laboratory reported late on the sixth day that the blood reacted strongly to the agglutination test for undulant fever.

Sulfaguanidine was commenced next morning and her fever subsided abruptly that day so that the temperature chart presented the appearance of that in a typical case of lobar pneumonia. The next day her temperature was normal all day. The patient made an uninterrupted recovery and has continued well to date, a period of two months and a half.

CONCLUSION

One is inclined to question the therapeutic mechanism involved in these cases, when it is known that an extremely small percentage of sulfaguanidine is absorbed from the intestinal tract. Granted that Brucella invades nearly every tissue in the body as evidenced by the cultivation of the organism from widespread areas, it is difficult to subscribe to the theory that the focus of infection remains in the bowel. At any rate, it would seem that we now have a satisfactory agent for treatment of brucellosis that is perfectly safe in large and effective doses.

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3. Carpenter, C. M. and Boak, R. A.: Treatment of Human Brucellosis. Medicine, 15:103-127, Feb., 1936.
4. Keefer, C. S.: Undulant Fever. Proc. Interst. Postgrad. M. A. North America. 22-27, 1941.

POSTGRADUATE LECTURES

PACIFIC NORTHWEST MEDICAL ASSOCIATION

Twentieth Annual Session, Hotel Multnomah, Portland, Oregon, June 17-20, 1942

PROGRAM

Fundamental Sciences

Anton J. Carlson, Ph.D., M.D.
Professor of Physiology, University of Chicago

1. "Our Inadequate Criteria of Health."
2. "The Machinery of Appetite for Foods."
3. "What Is the Matter with the American Diet, and What Can the Doctor Do About It."
4. "Some Unknowns in the Physiologic Pathology of Aging."

Medicine

Arlie R. Barnes, M.D.
Professor of Medicine,
University of Minnesota Graduate School

1. "The Pulmonary Embolism Problem."
2. "Changing Concepts of Coronary Artery Disease."
3. "Electrocardiographic Abnormalities Important in the Recognition of Various Types of Heart Disease."

Jerome W. Conn, M.D.
Assistant Professor of Internal Medicine,
University of Michigan Medical School

1. "Nature of Obesity and Its Management."
2. "Spontaneous Hypoglycemia; Causes and Methods of Diagnosis."
3. "Spontaneous Hypoglycemia; Methods of Therapy for the Commonly Encountered Clinical Types."
4. "Changing Concepts of Human Diabetes Mellitus."

Endocrinology

Elmer L. Sevringhaus, M.D.
Professor of Medicine,
University of Wisconsin Medical School

1. "Diagnostic and Therapeutic Problems Associated with the Menopause."
2. "The Use of Pituitary Preparations in the Treatment of Dwarfism and of Sex Retardation."
3. "Survey of Endocrine Preparations in Therapy by the General Practitioner."

H. Clare Shepardson, M.D.
Associate Clinical Professor of Medicine
University of California Medical School

Psychiatric Topics of General Interest.

Annual Dues of $12.00 *Cover All Attendance Costs Except Annual Banquet*

Membership cards can be obtained from Dr. Frank Perlman, 406 Medical-Dental Building, Portland, Oregon, or Dr. C. W. Countryman, 407 Riverside Avenue, Spokane, Washington.

Radiology

Frederick E. Templeton, M.D.
Associate Professor of Roentgenology,
University of Chicago School of Medicine

1. "Mucosal Relief Technic for the Roentgenologic Examination of the Esophagus, Stomach and Duodenum."
2. "Correlation of Roentgenologic and Gastroscopic Methods in the Diagnosis of Gastric Disease."
3. "Roentgenologic Aspects of Esophageal, Gastric, Duodenal and Jejunal Ulcer."

Military Medicine

D. W. Wheeler, M.D.
Lieutenant Commander, U. S. Navy Medical Corps,
Chief of the Medical Service, U. S. Naval Hospital,
Puget Sound Navy Yard, Bremerton, Washington

"Some Physiologic Aspects of War Injuries."

L. R. Gowan, M.D.
Lieutenant Commander, U. S. Navy Medical Corps,
Head of the Department of Neurology and Psychiatry,
U. S. Naval Hospital, Puget Sound Navy Yard,
Bremerton, Washington

"Psychiatric Aspects of Military Disabilities."

The Medical Profession in War Time

Major General Lewis B. Hershey
Director of the Selective Service System,
Washington, D. C.

"American Medicine and the War."

P. W. Gibson, M.D.
Colonel, U. S. Army Medical Corps,
Commanding Officer, Barnes General Hospital,
Vancouver, Washington

"The Doctor as a Medical Officer in the Army."

Surgery

Warfield M. Firor, M.D.
Associate Professor of Surgery,
Johns Hopkins University School of Medicine

1. "Treatment of Tetanus and the Use of Tetanus Toxoid."
2. "Treatment of Wounds Involving Soft Parts."
3. "Intestinal Antisepsis with Sulfonamides."

Verne C. Hunt, M.D.
Clinical Professor of Surgery
University of So. California School of Medicine

1. "Surgical Management of Lesions of the Stomach and Duodenum."
2. "Consideration of Various Surgical Procedures for Lesions of the Common Duct."
3. "Surgical Principles Involved in the Management of Lesions of the Colon."

IDAHO

The fiftieth annual meeting of Idaho State Medical Association will be held at Sun Valley Sept. 16-19. Program for this meeting will consist of postgraduate lectures. Lecturers will come from faculty of University of Oregon Medical School.

PACIFIC NORTHWEST MEDICAL ASSOCIATION

ADDITIONAL PHOTOGRAPHS OF GUEST SPEAKERS

Since publication of the May issue the following additional photographs have been received of guest speakers:

JEROME W. CONN, M.D.
Univ. of Michigan Medical School

VERNE C. HUNT, M.D.
Univ. of So. Calif. School of Medicine

The Pacific Northwest Medical Association was founded by several outstanding physicians of the Northwest twenty years ago. The purpose of the organization, as stated in the preliminary announcement of its first meeting, was "to assemble leading members of the profession from various parts of the country," for the furtherance of postgraduate work in diversified fields of medicine. The first meeting was held in Spokane at the old Hippodrome Theatre, in 1922, under the chairmanship of Dr. J. Else of Portland. In his opening address he declared among other things that "we should have an annual meeting of this type in which the men of the great Northwest, regardless of state, provincial or national boundaries, could come together and rub shoulders and discuss medical problems. Another feature, though, we felt was especially necessary, and that was to bring into contact with the west the great minds of the east at these meetings." That program included papers by such eminent physicians as Prof. Henry Christian of Harvard, Dr. William Engelbach of St. Louis University, Dr. Arthur D. Dunn of Creighton, Prof. W. B. Cannon of Harvard, Dr. Oliver Ormsby of Rush and Dr. Alfred W. Adson of the Mayo Clinic.

The high quality and interest of the Association's scientific meetings have been consistently continued, and a perusal of the coming lectures will indicate that this next meeting will be no exception. Meetings have been held yearly since 1922 except in those years when the American Medical Association held its meeting on the Pacific Coast, and the sessions have been held at one time or another in all of the larger cities of the Northwest. Portland was the site of outstanding meetings in 1925 and 1936, and promises an equally interesting and educational session this year.

✓CORRECTION OF ERROR

Last month the announcement was published of the meeting of Pacific Northwest Medical Association in Portland, June 17-20. Attention was called to the interesting and instructive program to be presented by distinguished members of the profession whose photographs appeared last month, with two others in this issue. An unfortunate error stated that the annual dues will be $25. This should have read $12, which covers all attendant costs except the annual banquet.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING PORTLAND, SEPT. 9-11, 1942

EDITORIAL

PREPAID MEDICAL CARE

At its May meeting the council once again was asked to gaze upon the ugly spectre of a ruined medical practice, ruined by this "new" thing called prepaid medical care. We have prepaid medical service and we are not going to get rid of it. We can no more return to the hapless and helpless medical economics of 1928 and previous years than we can, as a nation, hope for the "good old days" in one national economy. This social and economic revolution or evolution has been on its way for at least twenty-five years and that medical practice should be in for its changes is as inevitable as the coming of another dawn.

A form of prepaid medical care is here. Some physicians may not like it, in fact, many may not like it, but the fact that it is here is plain. We are "in for it" as one group sees it, and we are "for it" as the other group says. We might just as well take the reins in our hands, mount the driver's seat and do the driving. Only in that way can we make this new economy work for the good of the patient and the physician and it is up to us to do it.

The council has laboriously argued this point and has repeatedly said in essence what is written here. It has sanctioned a state organization, Oregon Physicians Service, which can and is writing contracts. The argument cannot be whether prepaid medical practice is the best for all concerned but must be what type of prepaid care is to be given.

It may be that medical practice is ruined. That is what has been said of every form of progress since civilization began. Something good and fine is always lost in changes of magnitude but something better and finer has eventually developed out of that change. By thoughtful guiding, we can make something eventually finer out of the present "ruins" of medical practice if we will.

Charles P. Wilson

ORGANIZATION ACTIVITIES

The Council met on May 2, in Portland, at which time three important matters were given consideration. A protest was authorized to be sent to Oregon's Congressmen and Senators against the proposed change in the Internal Revenue Code, whereby hospitals and educational institutions might become taxable. Charitable and educational institutions have always been exempt from income tax and the proposed legislation would be crippling to the institutions with small endowments. All physicians are urged to join in this protest by direct personal communication with their district congressman and senator.

A report of the committee on malpractice was received and discussed. Briefly, this report showed that the loss ratio for 1941 was up to 50 per cent from 21½ per cent. The nontrial losses again came to the fore and, as usual, these losses were because of (1) burns from endothermy, roentgen ray (not deep roentgen ray for treatment); (2) failure to take roentgenograms in suspected fractures; (3) doctor admitted his liabiliay to the patient without connsulting his insurance carrier. The answers again are obvious.

Ralph E. Jackson, former claim supervisor of the Oregon State Industrial Accident Commission, has been named general manager of the Multnomah Medical Service Bureau, according to John Besson, Bureau president. This is the first time the Bureau, which carries the approval of Oregon State Medical Society and Multnomah County Medical Society as an agency to provide prepaid medical service, has employed a full-time general manager.

"Growth of the Bureau—we now cover 22,000 persons in Multnomah County—has made necessary naming of a manager," said Dr. Besson. "Jackson has had eighteen years with the Industrial Accident Commission, a work that prepares him well for his new duties."

U. of O. MEDICAL SCHOOL

COMMENCEMENT

Degrees, caps and gowns, the commencement address, scholarship winners, pledges to the honorary; once again it's graduation time on University of Oregon Medical School campus. Not just another graduation. This is a wartime graduation. Off with the mortar boards for the graduates. Soon it will be on with the officer's caps in the U.S. armed forces.

Dr. Donald M. Erb, president of the University of Oregon, was invited to give this year's commencement address June 12. He will speak before fifty-one candidates for degrees and their parents and friends. Dr. R. E. Kleinsorge of Silverton will represent the Oregon state board of higher education at commencement.

Master of science degrees will be given the following: George Berglund, Doris M. Highet, Richard Wilson Leong, Aarne J. Lindgren, Cleota Ayers Pennoyer, Robert Earl Rinehart and Eugene V. La Clair.

Doctor of philosophy degree was presented to Francis Joseph Reithel. President Gordan McGowan of Alpha Omega Alpha, medical honorary, announced the following students chosen for membership: fourth year, Akin Mathieu, Harry Beckwith, Elwood Kreutzer, John Robson, Kurt Aumann; third year, Clarence Peterson, Joseph Nohlgren and Owen Miller. Frances Murray, Howard Varney and Gordan McGowan were chosen to A.O.A. last spring while in the third year.

Doctor of Medicine Degrees Conferred

Herbert Lepper Armentrout, Portland
Kurt William Aumann, Portland
Harry George Beckwith, Jr., Portland
George A. J. Berglund, Portland
Andrew Carlyle Bogdanovich, Portland
Barbara Jean Boyd, Portland
Andrew Francke Braff, Seattle
Franklin Meeds Butler, Spokane
Carl Wakely Calhoun, Portland
Earle Garrett Canfield, Ashland
Frederick Lavoisier Coddington, Opportunity, Wash.
Clarence Lansdowne Code, Seattle
John William Codling, Seattle
William James Corrigan, Portland
Charles Ward Day, Seattle
Jack Elliot Dunlap, Portland
George Alan Fisher, Portland
Harold Lionel Fisher, Weiser, Idaho
Philip Mark Frederick, Seattle
James Hadley Gerow, Portland
Barnard Hall, Portland
Thomas Sylvester Healy, Portland
John Dunn Kavanaugh, Portland
Elwood William Kreutzer, Salt Lake City
Richard Wilson Leong, Portland
Aarne Johannes Lindgren, Astoria
Edwin Herbert Lofquist, Portland
Donald Brooks Lucas, Portland
Graham Slagle McConnell, Pullman, Wash.
Gordon Wesley McGowan, The Dalles
Scott Bennett McKeown, Marshfield
Donald McKinley, Portland
Akin Mathieu, Portland
Frances Barton Murray, Seattle
Ralph Louis Olsen, Portland
Philip Eugene Pemberton, Hillsboro
Gordon Prewitt, Waldport
Glen Griffith Rice, Seattle
John Rush Ford Richardson, Portland
Robert Earl Rinehart, Wheeler
John Walter Ritchie, Hagerman, Idaho
John Theodore Robson, Seattle
Wilhelm John Sittner, Portland
Gordon David Steinfeld, Portland
John Elvin Snyder, Seattle
Jack Ernest Stucky, Klamath Falls
Douglas Hamilton Taylor, Cloverdale
George Everett Thompson, Portland
James Howard Varney, Powers
John Gates Verberkmoes, Kooskia, Idaho
Joseph Lawrence Yuhas, Stockett, Montana

Graduates Receiving Commissions as First Lieutenant, Medical Section, Organized Reserve Corps, U. S. Army

Franklin Meeds Butler
Carl Wakely Calhoun
William James Corrigan
Barnard Hall
Thomas Sylvester Healy
Graham Slagle McConnell
Gordon Wesley McGowan
Scott Bennett McKeown
George Everett Thompson

The above listed students have completed the prescribed medical R.O.T.C. course. In addition to these, twenty-one students have applied for Medical Corps commissions in the United States Army and twelve in the Medical Corps of the United States Navy.

So out with the old year and in with the new. The new year opens June 22, first time in the school's history a regular session has started this time of year. As all persons connected with medicine know by now, the school is cooperating with the government, like most all other medical schools, in speeding up the training of doctors.

Seventy-five students, ten more than the usual class number, will come directly to the Portland campus from their work in Northwest institutions of higher learning.

Good news for the student who wondered how he was going to make both ends meet, what with his money-earning summer vacation eliminated, came the announcement that the Kellogg foundation was making available a $10,000 student loan fund. Assistance provided will serve as a stopgap until legislation which will provide financial assistance for medical students can be brought before Congress.

Three classroom chairs were suddenly vacated in May. They belonged to first-year man John Uchiyamu and second-year men Toshiaki Kuge and Oyamada Abe. Reason for leaving: they were Japanese living in a restricted military zone. Uchiyama transferred to the unrestricted University of Utah medical school, Salt Lake City. Kuge and Abe went to the Japanese assembly center in the Pacific International Livestock exposition pavilion, there to assist in the medical department.

Two Japanese sisters, students in nursing, also were affected by the order. They are Midori and Tomiko Funatake. Both have gone to the University of Colorado School of Nursing, Denver.

STATE BOARD OF HEALTH

Japanese Evacuee Camp

There has been established at North Portland, a camp for evacuees of Japanese ancestry. An immunization program for typhoid and smallpox has been put into effect by the City of Portland Health Department. The Multnomah County Health Department has assumed responsibility for sanitation, and the Maternal and Child Health Division of the State Board of Health is holding well-baby clinics and is responsible for nursery care at the camp. Communicable diseases, to date, have been held to a minimum, and general attendance at the camp has served as a valuable education for state and local health personnel in evacuation camp technique.

Birth Registrations

According to Dr. Frederick D. Stricker, State Health Officer, the Division of Vital Statistics is now expending a major portion of its efforts in registration of unreported births. Some two or three hundred letters a day concerning delayed birth registration attest to the magnitude of the problem now confronting the Division.

Finding that many applicants cannot or will not secure supporting evidence in accordance with regulations of the Board, the procedure has now been relaxed so that any native Oregonian can file a delayed certificate with whatever evidence he can obtain. As all evidence is abstracted on the face of the certificate, any delayed certificate is no better than its supporting evidence. Therefore, the Board is now merely urging that each registrant submit the best possible proof in order to have a birth record of maximum evidentiary value.

A successful conference of City and County Health Officers was held in the library of the University of Oregon Medical School May 25 and 26. The principal speakers were J. G. Townsend, Chief of the Division of Industrial Hygiene of the U. S. Public Health Service, Washington, D. C.; Kenneth Maxcey, Professor of Epidemiology of Johns Hopkins School of Hygiene and Public Health; H. Close Hesseltine, Professor of Obstetrics of the University of Chicago

School of Medicine and George Baehr, Chief Medical Service, Office of Civilian Defense, Washington, D. C.

Postgraduate Course

Oregon State Medical Society. in cooperation with the Division of Maternal and Child Health of the Oregon State Board of Health, offered a postgraduate course for physicians in the state in fourteen centers.

The guest speaker was H. Close Hesseltine, M.D., F.A.C.S., Associate Professor of Obstetrics and Gynecology, University of Chicago School of Medicine. Leslie Kent, M. D., Chairman of Maternal Welfare Committee of the State Medical Society, Norman David, M.D., of the University of Oregon Medical School, Department of Pharmacology, and J. F. Belz, M. D., acting Director of the Division of Maternal and Child Health, State Board of Health, assisted in the course.

Local medical societies in cooperation with the local health department sponsored the course in the state.

Quarantine on Shellfish

At a meeting of the State Board of Health held in Portland, on May 21, the following regulation was adopted:

"A quarantine is hereby established on all mussels from the shores of the Pacific Ocean in Oregon, extending from the Oregon-California boundary north to the Oregon-Washington boundary, including its bays and estuaries emptying into the Pacific Ocean.

Mussels and uncleaned clams are unfit for human consumption, and it is unlawful to sell, offer for sale, or distribute them in the State of Oregon during the period of May 1 to October 31. All clams dug may be sold or disposed of for human consumption, only if cleaned and thoroughly washed and all dark parts discarded. Only the white meat should be prepared for cooking and eating.

This action is taken for the preservation of the public health, and is in addition to the Rules and Regulations governing the sanitary control of shell fish."

E. E. Berg of Astoria has resumed his duties as Clatsop County Health Officer.

Mr. C, M. Everts, Jr., Director of Sanitary Engineering, State Board of Health, is now serving as First Lieutenant in the United States Army, Cavalry Replacement Training Center, Ft. Riley, Kansas.

Mr. Kenneth Spies is acting Director of the Division during Mr. Evert's absence.

Mr. Roy E. Dodson, Jr., is State Director of Water Supply Protection, organizing a program for assistance under a mutual aid plan of water supplies in the state in case of emergency. The program is being organized under the State Defense Council.

G. D. Carlyle Thompson has resigned as Regional Consultant. Children's Bureau, and has accepted a position as Regional Medical Officer, War Relocation Authority, San Francisco, California.

OBITUARIES

Dr. James C. Ghormley of Tolovana Park died March 28, at the age of 59. The cause of death was congestive heart failure.

Dr. H. H. Hattery of Pendleton died April 23, at the age of 61. The cause of death was cardiovascular disease.

WOMAN'S AUXILIARY

Mrs. Charles E. Hunt, president of the Woman's Auxiliary to the State Medical Society with three other officers of the group recently made a tour of coast county auxiliaries. Mrs. Bertram F. Zener of Portland, president-elect; Mrs. G. C. Bellinger of Salem, first vice-president; and Mrs. Laurie Lind of Portland, treasurer, went with Mrs. Hunt on the trip. The out-of-town officers arrived in Eugene at noon and a luncheon was given for them at the Oregon hotel by the Lane county executive committee and auxiliary leaders. Later the four officers left for Marshfield for an evening meeting and on up the coast to Gearhart.

Benton County Medical Auxiliary held its annual installation of officers at its April meeting which was held at the home of Mrs. N. L. Tartar. She also acted as installing officer, at which time Mrs. E. W. Howard assumed the duties of president for the coming year. Serving with Mrs. Howard will be Mrs. E. H. Kelley, vice-president; Mrs. W. H. Fortner, secretary and Mrs. D. C. Reynolds, treasurer.

Marion County Auxiliary met April 14 at the home of Mrs. Fred Thompson with twenty members present. State president Mrs. Charles E. Hunt visited the auxiliary and presented the work of the state auxiliary and of various county auxiliaries over the state. Going with Mrs. Hunt to Salem were Mrs. M. G. Howard, state corresponding secretary; Mrs. N. Paul Anderson, president of Lane County Auxiliary; Mrs. J. R. Wetherbee, president-elect, and Mrs. A. F. Barnett.

Multnomah County Auxiliary's survey of the defense activities of its members shows that 2011 hours each month is being given to wartime activities by auxiliary members. At a recent meeting Dr. Lewis C. Martin spoke on "Opportunities and Facilities in Special Education for Portland Children." A report of the findings of the Portland Federation of Women's Organization's milk price study was also presented at this meeting by Mrs. George Saunders.

SOCIETY MEETINGS

KLAMATH, JACKSON AND SOUTHERN OREGON SOCIETIES

Physicians and dentists of Klamath and Jackson counties, with Southern Oregon Medical Society, will hold a meeting at Chalker's Inn on Rogue River, June 13, 2 p.m.

Guest speakers will be Leo Eloesser, Professor of Clinical Surgery, Stanford University. Subject: "Treatment of Compound Fractures in War Time." Henry Kline Fixott, D.M.D., Professor of Radiograph, Jurisprudence and Economics, North Pacific Dental College, Portland. Subject: "Planigraphy of the Teeth and Head."

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SPOKANE, AUG. 17-19, 1942

ARMY RECRUITING TEAM DUE

The Procurement and Assignment Committee of the state has been informed that a special Army Recruiting Team will establish headquarters in the offices of the Washington State Medical Association, 218 Cobb Building, within a few days.

The team will consist of two officers, Major Irvin C. Munger, Jr., M.C., and Capt. Edward A. O'Malley. Major Munger represents the Surgeon General's Office and Captain O'Malley the Adjutant General's Office of the Army. Major Munger, former president of Clark County Medical Society, is stationed at the Station Hospital, Vancouver, and Captain O'Malley will arrive from Camp Roberts, California.

The team will work in cooperation with the state chairman of the Procurement and Assignment Service for Physicians and will travel throughout the state, interviewing physicians for the Army.

Raymond L. Zech, state Procurement and Assignment Chairman, while attending a meeting for Army, Navy and all procurement and assignment state chairmen of Western United States on May 7 at Omaha, learned that is hoped a generous response will be made from each state. Washington, it is hoped, will furnish 200 physicians for the Army by July 1. It was said, at the Omaha meeting, that the Army will require 5,000 physicians on this first call, another 16,000 by the end of this year and a total of 52,000 by the end of 1943.

MAY RECLASSIFY PHYSICIANS

Because of the urgent need of physicians by the Army and the fact that they are given commissions commensurate with their age, all draft boards throughout the nation have been urged to reclassify physicians for military service regardless of dependency.

The suggestion for reclassification was issued as an amendment to Local Board Release No. 89 in a memorandum by Major General Lewis B. Hershey, National Director of the Selective Service System to all state directors of Selective Service.

The Memorandum is as follows:

Amendment (I-363) 4/28/42
National Headquarters
SELECTIVE SERVICE SYSTEM
21st Street and C Street N. W.
Washington, D. C.
January 28, 1942
AMENDED 4/28/42

MEMORANDUM TO ALL STATE DIRECTORS (I-363)
LOCAL BOARD RELEASE (89)
SUBJECT: OCCUPATIONAL DEFERMENTS OF MEDICAL DOCTORS, DENTISTS, AND DOCTORS OF VETERINARY MEDICINE (III).

1. Information previously distributed by this Headquarters clearly indicates an overall shortage of medical doctors, dentists, and doctors of veterinary medicine in the nation. Since war was declared, the shortage of these professional men has become acute. It is now manifest that every qualified doctor, dentist, and veterinarian must serve where he can render the greatest professional service to the nation.

2. In order to accomplish this purpose, the President, by executive order, has formed the Procurement and Assignment service. This service was formed for the purpose of gathering and making available information with respect to the supply of qualified practitioners in the fields of medicine, dentistry, and veterinary medicine, with a view of securing the most effective allocation of medical manpower as indicated by the requirements of the armed forces, civilian needs, and industrial medicine.

3. To work with the headquarters of the *Procurement and Assignment Service there has been appointed for each State and the District of Columbia a State chairman for medical doctors, a State chairman for dentists, and a State chairman for doctors of veterinary medicine. These State chairmen will secure information concerning their respective professions and will give advice regarding the allocation of medical manpower.*

4. When considering the classification of any registrant who is a qualified medical doctor, dentist, or doctor of veterinary medicine, the Director of Selective Service desires that local boards, through the State Director, shall consult *with the respective State Chairman of the Procurement and Assignment Service.*

5. *In considering the classification of a registrant who is a qualified medical doctor, dentist, or doctor of veterinary medicine, the local board may, if it finds such registrant should not be deferred for reasons other than dependency, take into consideration the pay and allowances which such registrant would receive in the event he is commissioned in the armed forces. In practically all instances the pay and allowances of such registrant, if he were commissioned as an officer, would be sufficient to eliminate the question of dependency.*

Lewis B. Hershey, *Director*

REREGISTRATION UNDER HARRISON NARCOTIC ACT

The Collector of Internal Revenue at Tacoma states that an unduly large percentage of doctors become delinquent in registering under the Harrison Narcotic Act. A request has been received from his office that the following announcement be published for the benefit of Washington and Alaska doctors:

> Approximately 3,000 persons in Washington and Alaska who are required by law to register under the Harrison Narcotic Act will be mailed application for re-registration May 25, according to Clark Squire, Collector of Internal Revenue. Explaining that failure to comply with the law would make them liable to severe penalty, Squire cautioned all importers, manufacturers, producers, compounders, dealers and dispensers that applications must be in the collector's office in Tacoma on or before July 1.
>
> Each year about 200 of them, including many doctors, fail to submit their applications on time and thereby subject themselves to penalty. Section 9 of the law states that "any person who violates or fails to comply with any of the requirements of this Act shall, on conviction, be fined not more than $2,000 or be imprisoned not more than five years, or both, in the discretion of the court."

MEDICAL NOTES

Spokane Gets Army Hospital. The city of Spokane has turned over a section of ground in the northwest corner of the city for construction of a large cantonment type hospital for the Army. It is estimated that cost will be $3,500,000.

Health Department Loses Dewey. Leonard A. Dewey of the state health department has received a commission in the Army and is in charge of venereal disease control in the eighth corps area, with headquarters at San Antonio.

Hospital Staff Elects. Election of staff at Providence Hospital, Seattle, resulted in selection of H. L. Goss, president; Jackson Holloway, vice-president and Alfred Balle, secretary-treasurer.

Diabetes Association Formed. Washington Diabetes Association was formed at a meeting held in the Medical Dental Building, Seattle, May 11. Membership will include physicians, nurses and laymen interested in problems of those suffering from diabetes.

Defense Medical Officer Named. Arthur E. Lewis of Seattle has been named state medical officer for civilian defense. He is planning a state-wide tour to coordinate the defense activities of all medical and emergency defense units.

Tuberculosis Association Meets. Washington State Tuberculosis Association held its annual meeting in Tacoma, April 22-23. The meeting was addressed by G. C. Bellinger of Salem, Oregon, Capt. R. E. Tennant of Fort Lewis, Miss Louisa K. Eskridge of Denver and W. B. Penney of Tacoma.

Public Health Meeting. Western branch of the American Public Health Association met May 26-29 at the Olympic Hotel, Seattle. Speakers included Harry S. Mustard of New York, editor of the *American Journal of Public Health;* Reginald M. Atwater, also of New York, Albert McCowan of Washington, D. C. and William P. Shepard of San Francisco.

Instruction in War Gases. Three Pacific coast cities are to have schools of instruction on war gases. A class in Seattle limited to seventy-five physicians will be held June 12-14. Those receiving instruction at this school will return to their communities to instruct other physicians. The other Pacific coast cities to hold such schools will be Palo Alto and Los Angeles.

Wedding. J. F. Scott of Yakima and Mrs. Kathryn MacGinnitie of Northfield, Minnesota, were married in Salt Lake City May 3.

OBITUARY

Dr. Augustus Edward Gerhardt of Wenatchee died from coronary thrombosis May 3, aged 60. He was born in Illinois and received his medical education at Northwestern University Medical School, graduating in 1909. The following year he came west and practiced for a while on Whidby Island and also at Seattle. During the first world war he served as a major in the Army Medical Corps. He was long interested in medical affairs and at the time of his death was a member of the board of trustees of the Washington State Medical Association.

Dr. Oscar Stenberg of Spokane died April 24 at Rochester, Minnesota. He was 67 years of age. He was born in Sweden and received his medical education at Medical Faculty of Trinity University, Toronto, Ontario, graduating in 1902. He practiced in North Branch, Minnesota, for a time and came to Spokane in 1910.

Dr. Aldus Arthur Hoopman of Seattle died May 11, aged 77. He was born in Maryland and received his medical education at Baltimore University School of Medicine, graduating in 1888. He came to Seattle in 1911.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

The regular meeting of Cowlitz County Medical Society was held at Hotel Monticello, Longview, May 20. Guest speaker for the evening was Howard P. Lewis, Assistant Professor in Internal Medicine at University of Oregon Medical School in Portland. His talk was "The Irritable Colon, the so-called Spastic Colitis." It was very well received by the members who carried on a general discussion of the topic following the talk.

Richard Hayes of Longview was admitted as a new member of the society.

WALLA WALLA VALLEY MEDICAL SOCIETY

Walla Walla Valley Medical Society held its regular dinner meeting at Grand Hotel, Walla Walla, May 14. The following officers were elected: President, C. J. Johannesson; Vice-President, C. R. Garrett; Secretary-Treasurer, H. P. Kahler; Board Members, A. A. Yengling and A. E. Lange; Delegate to State Medical Association meeting, Elmer Hill; Alternate Delegate, P. D. Brink.

The scientific program consisted of a film on pneumonia, showing the marvelous progress that has been made in pushing it from third to fifth place, in cause of death. Also a film on Immunology showing the wonderful progress that has been made in this important field of preventive medicine. They were presented by Lederle Laboratories.

STATE BOARD OF HEALTH

NEW REGULATIONS OF THE STATE BOARD OF HEALTH

At the last two meetings of the State Board of Health on March 13 and April 24, there were adopted Rules and Regulations concerning the sanitation of food handling establishments and eating and drinking places, and concerning trailer camps and trailer coaches. The former is modeled after the Standard Restaurant Ordinance of the United States Public Health Service. These were drafted after several months of study of the problem.

PERSONNEL CHANGES BY REASON OF WAR EFFORT

L. A. Dewey, Chief of Division of Epidemiology and Venereal Disease Control of the State Department of Health is on military leave of absence to the army. To date, the department has supplied the Army and Navy with three physicians who were chiefs of divisions in the department, and have supplied them with four engineers, one formerly the chief of the Division of Public Health Engineering.

A. E. Lewis of Seattle was appointed Assistant State Medical Officer for Civilian Defense by the Washington State Defense Council, and assumed his duties the sixteenth of April. He will assist the State Director of Health who is State Medical Officer for Civilian Defense.

CLAM POISONING

Manifestation of clam poisoning became evident May 2. Prohibition of sale of clams dug since April 15 has been ordered and will remain in effect until investigation is complete and order rescinded.

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, SEPT. 16-19, 1942

MEDICAL NOTES

Pediatrician Visits. Sydney Sinclair, Associate Professor of Pediatrics, University of California Medical School, recently spent three weeks in Idaho, addressing groups of physicians throughout the state. His tour was under auspices of the Division of Maternity and Child Health of the state health department.

County Board Asks Powers. Board of county commissioners of Bannock County has received legal opinion that they may declare an emergency in reference to hospital facilities at Pocatello and proceed with construction. A recent survey showed that there were only thirty hospital beds available for a total population in the county of 34,000.

Nurses' Home Opened. Recently completed nurses' home for the L. D. S. hospital at Idaho Falls was opened for public inspection May 12. Dedication ceremonies have been delayed due to illness of the presiding bishop of the L. D. S. church in Salt Lake City.

Official Positions. G. D. Bock, Director of Boise city health unit, has resigned to accept a commission in the medical corps of the Navy. He will be replaced by Paul Ensign.

Sanitarian's Services Asked. Kootenai County Commissioners have asked the state department of health for services of a sanitarian during construction of the Naval training station at Coeur d'Alene.

Hospital Drive Started. An attempt to raise $15,000 for a new hospital at Ashton was started May 10.

SOCIETY MEETINGS

POCATELLO MEDICAL SOCIETY

Pocatello Medical Society held its regular meeting May 8 at St. Anthony's Hospital, Pocatello. Paul Ellis of Wallace, president of the Idaho State Medical Association, was guest speaker.

NORTH IDAHO DISTRICT MEDICAL SOCIETY

Regular meeting of the North Idaho District Medical Society was held at the Lewis Clark Hotel, Lewiston, April 15. The meeting was addressed by Harry Einhouse of Moscow on the subject "General Principles of Allergy."

SOUTH SIDE MEDICAL SOCIETY

Regular meeting of South Side Medical Society was held at Twin Falls May 13. Speakers were F. M. Cole of Caldwell, who discussed "Procurement and Supply"; J. L. S. Stewart of Boise, who read a paper on "Gastric Surgery" and Sydney Sinclair of the University of California, who is touring the state under auspices of the state health department.

J. W. Marshall and E. T. Rees of Twin Falls showed a color motion picture of a case of primary diphtheria of the skin in an infant.

CLINICAL FORUM

OBSTETRIC PROBLEM

Mrs. M. S. was admitted to hospital February 6, 1942 with the following history: Age 42, gravida VI para IV. Last menstrual period June 3, 1941. Expected date of confinement March 10, 1942.

Present Illness: On January 17, the patient had a sudden gush of blood from the vagina which she estimated to be one and a half pints. Following this she had several attacks of vaginal bleeding, but to a lesser extent, the last occurring the day before hospital admission.

Examination disclosed a soft systolic murmur at the apex of the heart which was not transmitted. Her baby was in vertex presentation without engagement. Hemoglobin 73 per cent, Wassermann 4 plus (her private physician had not taken a Wassermann during this pregnancy).

Blood donors were obtained. A sterile vaginal examination disclosed a marginal implantation of the placenta. The bag of waters was ruptured and several unsuccessful attempts were made to apply various types of forceps to the baby's scalp.

February 7, fetal heart beat normal. Patient having no pains. Induction was attempted, using pituitrin and theelin but without success. The patient has had no bleeding since rupturing the membranes. In the evening she was given 3 mg. of stilbestrol. At midnight her temperature was 100° and sulfathiazole was started.

February 8, 8:20 a.m. Patient had a chill and temperature rose to 103°. She was having no bleeding but had a foul smelling vaginal discharge. She was given an injection of pituitrin, and again without success. At 11:45 a.m. an attempt was made to apply Willet forceps to the baby's scalp which was not successful. Therefore, a 9 cm. Voorhees' bag with one pound traction weight was applied within the cervix. The patient was transfused, following which she had a chill with temperature 105°. If at this juncture, her physician could not be reached and you were called into consultation, what would be your treatment? It should be noted that the patient is not in labor.

COMMENTS ON PEDIATRIC PROBLEM IN MAY ISSUE

First commentator states: The diagnosis in the infant has already been presented, consequently it is not part of the picture. As a matter of interest, one wishes that the author had recorded a blood count taken when the child was first seen, also a differential grouping of the strep. in order to determine which variety was present. Apparently this organism was quite tenacious and the child had only a partial resistance built up against its onslaught, evidenced by the fact that the germs followed the tract of the spinal puncture needle, causing an abscess along its course.

Before the days of sulfonamides, and that was only a few years ago, there was little one could do to alleviate or counteract this serious infection. Probably often and ample drainage of the spinal canal, salicylates, hot packs and transfusions would represent the limit of possible therapy.

But since sulfanilamide has been proven of therapeutic value, especially against the streptococcus, and even though it does not diffuse readily in the spinal fluid, large doses would be indicated for a few days, following a few more days with sulfathiazole and again with sulfadiazine in an attempt to find the one that would act the most potently against this insistent infection. In the meantime, blood counts and urine examinations should be carefully checked daily.

The prognosis, say ten years or even five years ago, would have been exceedingly poor. It would be even worse with a postponed or late successful sulfonamide therapy. If the organism is very quickly overcome and the child makes a rapid and uneventful recovery before it be possible for the strep. to do cellular damage to the structures of the central nervous system, then the ultimate result will be a happy one.

But if this organism is found to be very resistant and is slow in being overcome, it means that its toxic inroads into the meninges of the spinal cord as well as the upper central nervous system will cause rather marked changes if not destruction, with resultant scar formation. The prognosis in the latter situation would be a child left in sad circumstances with greater or lesser forms of muscle contractures, aberrant coordinations, with a possibility of epileptiform seizures later in life, a state which sometimes one feels is worse than if exitus fatalis had occurred the first week after the serious onset.

Second commentator believes: The infant who developed streptococcal meningitis suggests a selection of one of the sulfonamide drugs, possibly selecting sulfanilimide, attempting to give it by mouth in proportion of 1.5 grains per pound of body weight. If this is not tolerated, the use of Baxter's vacoliter solution might be employed. No advantage of intrathecal use of the drug has been shown over the oral route, as all body fluids are equally saturated.

Prognosis of a normal child is not good, granting the infection was successfully combated. Adhesions are likely to form between the brain surface and inner cranium (arachnoiditis), causing uncontrollable motor impulses, and varying patterns of neurologic phenomena. The arm and leg movements might be spastic. Scarring and narrowing of the aqueducts might produce a mild or severe hydrocephalus with resultant thinning of the cortex and mental deterioration.

Supportive treatment of the infant with transfusions should be helpful, finding, if possible, a donor who might have a high titre of immunity against the streptococcus. Spinal and cervical punctures have been arranged to allow continuous draining, which would be helpful in keeping the fluid in motion and minimize stagnation of cells and bacteria.

Conclusion of Case: This child had a very stormy progress, if it could be called a progress. At the time of her illness, sulfathiazole and sulfadiazine were not obtainable, but she was given large doses of sulfanilamide. Twice during her stay in the hospital, which was from January 11 to April 29, she developed suppurative otitis media. Less than three weeks after admittance, her legs became quite spastic and assumed a scissor-like position.

She had a number of spinal punctures. No organisms were found the first part of March nor again afterwards. During March she assumed a marked opisthotonos position which remained for nearly two months. Twice without any apparent or particular cause, her temperature rose to 105° and once to 106°, dropping to normal within twenty-four hours. She was last seen about two years after her hospital experience. Her legs were still spastic but not "scissored." She seemed to hear and see normally.

Two years later the report comes in that she is able to walk a little and says just a few words, but still presents the wreck of a child who has received a terrific blow to her central nervous system from this strep infection. It would appear that her life anticipation is not a rosy one.

BOOK REVIEWS

Electrotherapy and Light Therapy. With the Essentials of Hydrotherapy and Mechanotherapy. By Richard Kovacs, M. D., Professor of Physical Therapy, New York Polyclinic Medical School and Hospital, etc. Fourth Edition, Thoroughly Revised. Illustrated with 314 Engravings and a Color Plate. 735 pp., $8. Lea & Febiger, Philadelphia, 1942.

In this revised edition the author presents the principles and practice of physical therapy up to date. No one is better qualified than he to publish a book on this subject. The thirty-eight chapters are presented in five parts, designated respectively Electrophysics, General Electrotherapy and Electrodiagnosis, Light Therapy, Essentials of Hydrotherapy and Mechanotherapy and Applied Physical Therapy. In order to attain proficiency with physical therapy, one should be familiar with the principles on which it has become established. In the first two parts of this volume these are thoroughly explained. A careful study of them will prepare the student for application of the various agencies employed in this form of practice.

Following World War I, when physical measures were employed in rehabilitation of convalescent patients, procedures under physical therapy were used with such success that the medical profession soon realized their value in the general practice of medicine. The author of this volume was one of the leaders in promoting methods comprised under electrotherapy, light therapy, hydrotherapy and mechanotherapy. These measures have been so long in use by the medical profession of this country that their importance is now thoroughly established. No volume is published which excels this in detailed description of agencies employed, with directions for their use in various conditions of disease. Every one practicing physical therapy should have access to this volume.

Nephritis. By Leopold Lichtwitz, M.D., Clinical Professor of Medicine, Columbia University, New York, etc. 328 pp, $5.50. Grune & Stratton, 1942.

In fourteen chapters of this volume the author deals with many phases of diseases of the kidney. The chapter on physiology and pathology forms an adequate basis for study of this organ. Much information is presented in the chapter on water metabolism dealing with diuresis and anuria. A method is explained of analyzing renal function and urinary excretory capacity, so simple that any physician can employ it with a minimum of laboratory equipment. It offers timely suggestions in diagnosis and prognosis. Particular emphasis is laid on the systemic character of nephritis which broadens some accepted views on the subject. The clinical applications of this volume present valuable information for the practicing physician. Each chapter is followed by an extensive bibliography for further study if desired.

R. F. FOSTER

PARERGON. Second Edition. Published by Mead Johnson & Company, Evansville, Ind.

The title of this volume is derived from a Greek word meaning "work by the side of work." Applied to the medical profession, it describes the artistic accomplishments of physicians, being their hobbies in addition to practice of medicine. It is stated that since 1926 local art clubs have been formed by groups of physicians in the United States and Canada. In 1938 the American Physicians' Art Association was organized which since that time has held annual exhibits, coinciding with meetings of the American Medical Association. It is anticipated that its most successful and notable exhibit will form a part of the annual meeting of the A.M.A. at Atlantic City this month.

This volume devotes ninety-six pages to reproductions of works of art by physicians of the United States. They include oil and water colors, etchings, lithographs, sculpture, wood carving, pastels and photographs. The largest number of artists are listed from New York City and California. Oregon and Washington, however, are not omitted. The following exhibitors are listed from Portland: S. M. Gellert, Leo Ricen and W. H. Watson have oil paintings; Franklin P. Johnson has a wood carving, while John W. Brand and Dan N. Steffanoff appear in photography. From Seattle, Frederick Adams has an oil painting, Homer Wheelon a pen sketch and photography is represented by Ray Jones. It may be that other embryo artists will be inspired in the future to appear as exhibitors.

MANAGEMENT OF THE SICK INFANT AND CHILD. By Langley Porter, B.S., M.D., M.R.C.S., (Eng.), L.R.C.P. (Lond.), Dean Emeritus University of California Medical School and Professor of Medicine, etc. and William E. Carter, M.D., Director of University of California Hospital, etc. Sixth Revised Edition. 977 pp. $11.50. The C. V. Mosby Co., St. Louis, 1942.

This volume brings up to date the material contained in five previous editions. Practical technical procedures are well presented and useful clinical advice given in a pleasing and authoritative manner. This single volume has been accepted for years as one of the better standard textbooks on the care of infants and children. The new edition tops all the others. Superlatives should be shunned by the unprejudiced reviewer, leaving all such thrasonical bombast to the publishers.

To say that "everything you need to know about the care and management of the sick child is contained in this book" is not only untrue; it is unfair to the authors. No textbook will ever take the place of training and experience, though in view of the fact that "experience sometimes consists in making the same mistakes over and over again," it would be well for the pediatrician to include in his office library such an excellent reference as this volume.

W. B. SEELYE

DIRECTORY OF MEDICAL SPECIALISTS. Certified by American Boards, 1942. 2495 pp., $7. Columbia University Press, New York, 1942.

This volume is the official publication of the fifteen American Boards certifying in the medical specialties. This is the second edition, issued under authority of the Advisory Board for Medical Specialties. It presents the activities of all the Boards with biographic sketches of their Diplomates. In it are listed approximately 18,000 specialists, information being presented for each as to medical education, hospital intern service and present connection with hospitals and other medical service.

Inclusion in this directory is evidence of professional qualifications as attested by examinations before the component Boards, and is assurance of qualifications of all herein listed. The volume is of value to institutions seeking qualified members of the profession for their particular requirements. This edition provides new biographic information not included in the first edition. Not only is presented much information concerning membership of the different boards, but examination requirements of the latter are also included with all changes to date. Examination of this volume will convince one of the desirability of inclusion in this listing.

SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY for Students and Practitioners of Medicine. By Forrest Ramon Davison, B.A., M.Sc., Ph.D., M.B., formerly Assistant Professor of Pharmacology in the School of Medicine, University of Arkansas, Little Rock, etc. Second Edition, with 45 Illustrations, Including 4 in Color. 693 pp, $5.75. The C. V. Mosby Company, St. Louis, 1942.

Every practicing physician needs convenient access to a book dealing with materia medica, from which he may obtain knowledge of drugs in common use. This book is of convenient size and offers a mine of information. The author states that he has kept in mind two principles, that pharmacology is an integral part of medicine, and that there should be judicious limitation of the subject matter consistent with its importance in the field of medicine. It is intended, so far as possible, to deal with drugs having established therapeutic values. Highly specialized scientific details have been omitted, emphasis being placed on fundamental and practical applications of drug action.

Different chapters include drugs whose actions are described affecting different organs. Due attention is also given to vitamins, serums, vaccines and hormones. An interesting feature of the book is introduction of useful prescriptions in connection with different drugs and their application to diseased conditions. Following each chapter is a bibliography containing an abundance of reference for further study if desired.

THE SCHERING CLINICAL GUIDES. Vol. 1, Female Follicular Hormone Therapy; Vol. 2, Corpus Luteum Hormone Therapy; Vol. 3, Male Sex Hormone Therapy. Prepared and published by the Schering Medical Research Division, Schering Corporation, Bloomfield, N. J., 1942.

Much has appeared in the literature in recent years concerning sex hormones, their respective functions and therapeutic capabilities. Such varied reports have been presented that confusion has often existed as to their practical applications. The contents of these three booklets, each consisting of about fifty pages, present briefly, yet adequately, the principles for administration of these hormones. Any physician administering these preparations would do well to have these clinical guides at hand for consultation. It is stated they are obtainable from the publishers by anyone requesting them.

HAZARDS INVOLVED IN SELF MEDICATION

The hazards of self medication with massive doses of vitamin D, particularly in the summer time, are illustrated in a report in *The Journal of the American Medical Association* for May 16 by Philip A. Tumulty, M.D., and John Eager Howard, M.D., Baltimore, of 2 patients who showed evidence of poisoning from massive doses of irradiated ergosterol, a substance which acquires the properties of vitamin D_2 when subjected to ultraviolet rays. This bears no relationship to the taking of vitamin D by infants for the prevention of rickets.

"During the past five years," the two physicians say, "there have been an increasing number of clinical reports regarding the use of massive doses of vitamin D in the treatment of rickets, tetany, rheumatoid arthritis and various allergic states.

"We shall make no attempt to evaluate the therapeutic (treatment) efficacy of vitamin D or its concentrates in these conditions but shall rather put out a suggestion of caution regarding the possible ill effects that may follow, under certain circumstances at least, the employment of massive doses of the vitamin . . ."

They tell of 2 young men who, in July, 1941, were given massive doses of irradiated ergosterol, presumably as an aid in the reuniting of fractured bones of the leg. About two weeks after the massive doses were started nausea, followed by abdominal pain and vomiting, developed. It was found that hypercalcemia (excessive amounts of calcium in the blood stream) and a persistent impairment of the function of the kidneys had developed. The diagnosis was irradiated ergosterol intoxication and within two days after fluids had been forced and the patients given a low calcium diet, the symptoms disappeared.

Of particular significance is the observation of the two physicians that "The circumstances which may have contributed to this intoxication were the amount of drug which was given, the vehicle in which the drug was given (milk), the calcium content of the diet, the factor of immobilization and the season of the year."

They point out that there are great individual variations in the dose required to produce poisoning; that a seasonal variation with reactions much more frequent in the summer time is well established, and that diet also is an important factor.

EFFECTIVE TREATMENT FOR AN EYE DISEASE

The direct application of a 5 per cent ointment of sulfathiazole or sulfathiazole sodium was effective in causing rapid healing in 11 out of 15 cases of inclusion conjunctivitis (inflammation of the membrane that lines the eyelids and covers the eyeball in front, due to a particular virus) in infants, children and adults, Phillips Thygeson, M.D., and William Stone Jr., M.D., New York, report in *The Journal of the American Medical Association* for May 30. In 10 of the 11 cases the virus could no longer be found after the third day of treatment. Two of the remaining 4 cases, 1 in a child and 1 in an adult, required supplementary treatment by mouth; the remaining 2 cases, both in infants, failed to heal until the mothers learned to employ the medication properly. There were no recurrences. Untreated cases of the disease take from four to six months to heal.

SIMPLE TREATMENT OF NAIL PUNCTURE WOUNDS OF THE FOOT

A simple plan of treatment for nail puncture wounds of the foot is described in *The Journal of the American Medical Association* for May 30 by Fred H. Bowen, M.D., Lieutenant (j.g.), U. S. Naval Reserve, New River, N. C., who says that a total of 661 such wounds were treated by the method with no deaths or tetanus.

Pointing out that there is a wide diversity of opinion in medical literature concerning the proper treatment of such wounds of the foot, Dr. Bowen says that "most authors advocate probing the wound, laying it open, injecting an antiseptic solution . . . and instituting some form of drainage. It is my opinion that such treatment is unnecessary, painful and harmful and that it is followed by prolonged disability and at times by a painful . . . scar. Foreign bodies are not often carried deeply into the foot by a nail but they lie in the dermis (skin) or just beneath it . . ."

He says that he has demonstrated that nails (6 to 20 penny) are wiped clean in the first ¼ inch of the wound.

In dealing with cases of nail puncture wounds incurred by laborers in the construction of the United States Naval Air Station at Jacksonville, Fla., he says, the following simple plan of treatment was used: The foot was soaked for fifteen to thirty minutes in hot water to which liniment of soft soap or a small quantity of a solution of cresol was added. The foot was dried carefully, and an area about 2 to 3 inches in diameter around the wound was painted with tincture of mercresin. The top layer of the skin was cut away around the wound. This exposed the foreign matter (usually sand, rarely particles of sock, leather, rust, rubber or concrete), which could then be easily removed. A dry dressing was applied, and 1,500 units of tetanus antitoxin was given. If the wound was caused by a nail larger than a 10 penny, the patient was told not to work for at least one or two days, but if a nail of lesser diameter was involved he returned at once to work.

SULFADIAZINE IS EFFECTIVE FOR INFLUENZAL MENINGITIS

Complete recovery of 5 of 7 children under 4 years of age from the highly fatal condition, influenzal meningitis, by treatment with sulfadiazine, a member of the sulfanilamide family of drugs, is reported in *The Journal of the American Medical Association* for May 23 by Wallace Sako, M.D.; Chester A. Stewart, M.D., and Joel Fleet, M.D., New Orleans.

Influenzal meningitis is an inflammation of the membrane enveloping the brain and spinal cord caused by the bacteria, Hemophilus influenzae, formerly thought to be the primary cause of influenza but now generally accepted as a secondary invader in complicated cases of influenza which in itself is caused by a virus.

One of the 7 children treated apparently died from a surgical procedure rather than the meningeal infection, the authors say, and the other child died after premature stopping of the sulfadiazine treatment and the contraction of chickenpox.

The three physicians say that "Various reports have emanated from Charity Hospital (New Orleans) reviewing the cases of influenzal meningitis. Tripoli in 1936 stated that 20 cases of influenzal meningitis seen from 1925 to 1934 were all fatal. Aleman in 1940 reported that from 1935 to 1939 inclusive 27 cases were treated with no recoveries. Bryan and Musser in 1941 remarked that for the past five years there had been 57 cases of influenzal meningitis treated with two recoveries. Forty-five of these cases occurred in children under 3 years of age with one recovery, this being in an infant 11 months old. . . .

"These reports reveal how gloomy the outlook for influenzal meningitis may be. . . . As far as we are aware there are no reports in the literature relative to the use of sulfadiazine in influenzal meningitis. . . ."

COLOSTRUM SKIN TEST FOR PREGNANCY DOES NOT APPEAR TO BE OF VALUE

The colostrum (the fluid secreted by the breast of a woman a few days before or after childbirth) skin test for pregnancy, announced last year by three University of Illinois College of Medicine physicians, did not appear to offer a valuable diagnostic procedure to Lester M. Goldman, M.D.; Henry B. Kessler, M.D., and Mildred E. Wilder, A.B., Newark, N. J., in an investigation conducted by them, they report in the May 9 issue of *The Journal of the American Medical Association.* The test is based on the theory that pregnant women will show no reaction when the substance is injected beneath the skin whereas nonpregnant women, and men as well, will develop a wheal on the skin at the site of the injection.

In 500 tests the three Newark investigators say there were approximately 70 per cent correct reactions in all groups, both male and female, tested. They say they find it difficult to explain why their figures vary so widely from those of the University of Illinois physicians who had reported no reaction in 98 per cent of pregnant women and reactions in 96 per cent of non-pregnant women.

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EDITORIALS

A. M. A. AT THE SEASIDE

When one envisions a great convention well provided with all requirements for its varied functions, Atlantic City comes at once to mind. Under the roof of the great Convention Hall all exhibits and meetings of all sizes are scheduled with no crowding or overlapping. Hotels large and small accommodate all comers. Cool ocean breezes temper heat, oppressive in inland cities. As expected, at this year's American Medical Association meeting, war conditions changed appearance of the landscape, most marked being the eerie outlook on the boardwalk at night with all lights extinguished except dim street lights concealed from seaview by large protecting shields. Naturally the usual quota of summer visitors has not equalled that of other years. Yet the registration of this medical convention exceeded the expectations of some, being above the eight thousand mark, but somewhat less than that of the Atlantic City meeting of five years ago. While about half of these registrants hailed from New Jersey, New York and Pennsylvania, all states were represented. From our three states eighteen were registered from Oregon, twenty-nine from Washington and four from Idaho. A noticeable feature was the large registration from foreign lands, especially significant being representatives from practically all Latin American republics with others from Canada and even South Africa, a total of about a hundred and forty.

The chief scientific element of the meeting was presented in formal papers, covering a multitude of subjects representing all branches of medical progress. In spite of the groups of specialists attracted by their particular prepared programs, all visitors were most intrigued by the scientific exhibits which developed into the most fascinating section of the meeting. The multitude and diversity of the booths were fairly bewildering. One's whole time at the convention might be spent here, acquiring much practical information, and yet be unable to compass all the attractions. Among these the treatment of fractures occupied the largest space and offered the latest technical details to the observer. Teams of demonstrators gave continuous exhibitions of the principles involved, with ready responses to all inquiries. Similarly low back pain, occupying much consideration of the average practitioner, was alloted large space, where a series of instructors explained responsible lesions that involved lumbovertebral and pelvic bones and, employing husky subjects, demonstrated methods of diagnosis and treatment.

The booth exhibiting the process of preparing blood plasma commanded a continuous audience. It was explained that all human blood can be utilized, regardless of race or origin, the quality of every donation being determined in the laboratory. The simplicity of the procedures was fascinating. Importance of the roentgen ray in diagnosis and treatment was emphasized by the multiplicity of booths illustrating the manifold applications of this agency. To the practitioner of a former generation the present knowledge of cardiac pathology is a revelation. With existing methods for accurate diagnosis as illustrated in exhibits, cardiology appears to have developed into an exact science. What more effective agency than the moving picture can be utilized to demonstrate technic in all branches of medical science. Instead of having these scattered about the hall as in former years, they have been consolidated in one area, where they present continuous performances, dealing with a great variety of subjects. These were only a few features of the scientific exhibits.

On entering the Convention Hall one encountered immediately the commercial exhibits, presenting in attractive forms many familiar instrument houses, producers of drugs, foods, books and appliances. The most popular resort seemed to be coca-cola, where two able-bodied men labored constantly, uncorking and distributing solace to a long line of thirsty humanity which would rival that of any popular movie. Methods of employing apparatus and instruments, production of evaporated milk, food and drug preparations were a few of the exhibits. Art works by medical men, assembled in the Mead Johnson & Co. gallery, was an astonishing exhibition of medical hobbies, displaying the artistic side of medicine. In truth, it has been asserted that a successful physician or surgeon must be an artist to attain eminence in his profession.

The machinery that propels the American Medical Association resides in the House of Delegates. The labor and devotion to his duties devolving on a delegate is not appreciated by the general membership. Attendance on sessions of the House reveals the multiplicity of its responsibilities and the many angles of its activities for the benefit of the profession of our country. These are revealed in reports of the numerous committees approved by the House which will be duly published in *The Journal*. Most of these were accepted without discussion, but some elicited debate. The committee reporting on medical service bureaus for low wage earners approved the system, providing they shall be endorsed by county and state societies. A California delegate urged that county authority alone might be permitted in certain cases. In Washington, where the bureau system was first established, each county bureau has always been an independent organization, controlling its own affairs. There were only a few contested offices, most of which were filled by single nominations. A community of spirit, a purpose to promote the welfare of the medical profession and determination to enlist its whole personnel to help attain victory in the war which shall preserve our national democracy and promote justice for all other nations were keynotes of the convention. Aften attending such a great medical gathering, one cannot recommend too earnestly that every practitioner should strive to avail himself of the opportunity whenever possible of being present at the annual session of the American Medical Association.

ENLISTMENT OF NORTHWEST PHYSICIANS

At the meeting last month of the American Medical Association at Atlantic City, Paul V. McNutt, Chairman of the War Manpower Commission under which the Procurement and Assignment Service for Physicians, Dentists and Veterinarians functions, delivered an address containing some disturbing statements regarding failure of the medical profession to enlist adequately for war service. He stated that the deficiency of volunteering for military service was due to an acute lack in certain populous states.

He stated that there was a need for more than 20,000 additional physicians by the end of the year. New York, Illinois, California, Massachusetts, New Jersey, Michigan and Ohio must account for nearly 16,000 of this shortage. Sixteen states have fewer than one hundred physicians needed to reach the total number they should supply. These were enumerated but did not include Oregon, Washington and Idaho. Officials from these three states attending the A. M. A. meeting received telegrams of protest against including their states in the deficiency column. These protests being presented to Mr. McNutt, he wrote the following letter to be read before the meeting of Pacific Northwest Medical Association which was about to meet in Portland. The letter is herewith produced as received from him, which offers a complete and satisfactory explanation of the enlistment problem in these states.

June 17, 1942

To the Pacific Northwest Medical Association:

My greetings to the Pacific Northwest Medical Association. I take special pleasure in extending those greetings because of the fine work your section of the country has been doing in mobilization of doctors for the military services.

Last week it was necessary for me, as Chairman of the War Manpower Commission, to state to the American Medical Association and to its House of Delegates how serious and urgent is the need for physicians for the armed forces. I reported that we needed 5,000 physicians within the next three weeks and a total of 20,000 before the end of this year. I reported also that under the safeguards of the Procurement and Assignment Service only 3,000 physicians not obligated by reserve commissions had volunteered in the first six months of this war as against 12,000 in the first six months of the last war.

Those were hard things to say to a profession which had so spontaneously offered its services in advance and so carefully blueprinted its problem. Nevertheless, the facts had to be stated. The case had reached a critical point. The profession could only plan its further action on the basis of facts.

One thing that has happened since that statement has been the receipt by my office of a number of complaints with reference to doctors who had volunteered and not been commissioned or been commissioned and not been assigned to duty. The second of those problems, that of a man who has been commissioned but not given orders is one which concerns only the Army and the Navy. Such men are included in the recruitment figures which I stated. In terms of the distribution of the Army's need, these may expect an early call.

With reference to those who have volunteered but have not yet been commissioned, I would call attention to one fact. Medical Officers' Recruiting Boards have been set up in every state. They are traveling boards. They may be reached through the State Chairman of the Procurement and Assignment Service. These recruiting boards are authorized to complete and make final decision as to the acceptability of candidates and they may issue commissions for medical officers under the age of forty-five. The whole process need take no more than a few days. Any physician who has made application and not received his examination or his commission should get in touch with the Medical Officers' Recruiting Board for his state, ask to be commissioned, and ask for his orders.

In the Northwest your record is not representative of the nation as a whole. Idaho and Utah are so close to their quotas that the Procurement and Assignment Service is recommending that the Medical Officers' Recruiting Boards for those states be withdrawn. Oregon is very little behind them in the effectiveness with which it has recruited physicians.

In the state of Washington, while somewhat fewer physicians have volunteered, the record is good. That state, moreover, has a very pressing need for medical service for workers in its booming war industries. As I emphasized in my talks to the American Medical Association, the pressing importance of industrial health and medical services for war industry areas must be recognized just as the need for military care is recognized. I would, therefore, request all doctors who are not volunteering for military services to contact the appropriate authorities and offer their services in meeting the industrial need. The most serious lags in recruiting are in the most populous states and in metropolitan areas.

It is a pleasure to take this opportunity to pay tribute to the vigorous wartime leadership of the physicians of the Northwest. That does not imply, however, that the job is done. Like others who serve their country in this total war, the Nation will not only honor you; it will ask for more. That is the way victories are won.

Paul V. McNutt, *Chairman,*
War Manpower Commission

THE NAVY MEDICAL CORPS

There are vacancies in the Navy Medical Corps, and doctors are invited to apply for appointments. Those who are graduates of Class "A" Medical Schools, have state licenses to practice medicine and surgery, and are members of a local medical society are professionaly qualified. It is not neccessary that young doctors just completing internship be licensed to practice or be members of a medical society.

Doctors up to fifty and one-half years of age are eligible for appointments, although very few appointments are made in the higher grades. Thus doctors not over forty-four and one-half years of age are most acceptable.

Physical standards require that the applicant be free from organic diseases, shall be in good general physical condition and that he shall have no incapacitating ailments. Appointments are given in the grade (rank) the applicant is most qualified to fill according to age, professional training and experience.

Salaries are as follows:

Lieut. Comdr., without dependents	$361.00
with dependents	$418.00
Lieutenants without dependents	$296.00
with dependents	$332.00
Lieut. (junior grade) without dependents	$247.00
with dependents	$283.00

Further information can be readily secured by writing or applying at the Office of Naval Procurement, 117 Marion Street, Seattle, Wash. This applies to doctors seeking Naval appointments from Oregon, Washington and Idaho.

ANOTHER TRUSTEE

While the House of Delegates is the governing body that determines policies of the American Medical Association, the Board of Trustees comprises the group of executives who put them into actual practice. Meeting at regular intervals, this Board keeps constantly abreast of the problems confronting the medical profession and is alert to solve them. Since the large majority of the Association's membership resides east of the Mississippi River, naturally most of the Board's personnel are chosen from that area. Yet a large and influential portion of physicians of our nation inhabit the Pacific Coast who have for a long time contested their unequal representation. At this meeting of the House to fill a vacancy in the Board of Trustees, the delegates elected Edward M. Palette of Los Angeles. With Ralph Fenton of Portland as existing trustee this gives satisfactory representation for the profession of the Pacific Coast. The large majority vote accorded Dr. Palette indicated the general satisfaction over his election.

ANNUAL MEETING OF WASHINGTON STATE MEDICAL ASSOCIATION

Annual meetings of state medical associations assume greater importance during these ominous times when the health of the people is vital to national defense and the winning of the war. The opportunities provided at these meetings for discussion of problems of medicine and surgery, especially as these relate to war medicine, should be regarded as essential for greater efficiency in rendering medical care in time of war.

The program of the annual meeting of Washington State Medical Association, to be held at Spokane, August 17-19, is designed to provide interesting and important subject matter for doctors serving the community, as well as for those in military service. There will be presented individual papers on subjects of general interest and panel discussions on subjects of special interest. Of the latter, the treatment of chest injuries, handling of fractures, care of the premature infant, induction of labor, and diseases of the circulatory system are under preparation.

Guest speaker for the convention will be Dr. Leo Eloesser, Clinical Professor of Surgery, Stanford University, San Francisco, California. Dr. Eloesser will give two discussions on war surgery emphasizing treatment of wounds. His personal experience in this regard in the recent war in Spain makes his discussions of wound treatment a valuable contribution to American medicine. Those who have not heard him will do well to avail themselves of this opportunity.

Moving pictures on medical and surgical subjects, scientific exhibits, and the usual commercial exhibits will provide information on a variety of subjects. Every effort is being made to make the meeting in August at Spokane outstanding from the standpoint of practical and, therefore, valuable information for the doctor.

One of the features of the convention will be the Army, Navy and Procurement luncheon to be held on Tuesday, August 18, at noon in the Davenport Hotel. The speakers for this event will be Dr. John H. O'Shea, member of the IX Corps Area, Procurement and Assignment Committee and a member of the National Preparedness Committee of the American Medical Association; Dr. Raymond L. Zech, State Chairman for Procurement and Assignment Service for Physicians; Major I. C. Munger, Jr., of the Medical Officers' Recruiting Board for Washington State; Lieut. Commander Chester J. Chastek, USNR and Advisor on Occupational Deferment for the Selective Service System; Lieut. Colonel J. N. Knox, Fort George Wright, Spokane, and Captain C. J. Moleman, M.C., U.S.N., Chief Medical Officer, 13th Naval District.

IMMUNITY AGAINST PERTUSSIS

Whooping cough is the one contagious disease of infancy that remains unsolved. Deaths from measles, scarlet fever, diphtheria and infantile paralysis, all combined, do not equal the total number of annual deaths from pertussis in babies. Attempts have been made to induce immunity in young infants, but they have all failed. Experimental efforts hitherto have not exempted even laboratory animals which have been inoculated against whooping cough.

It occurred to Cohen and Scadron[1] that, if the pregnant mother could be immunized actively during the latter part of her pregnancy, the newborn child might have a safeguard against infection by Bacillus pertussis. Accordingly, they inoculated expectant mothers with one hundred and twenty to one hundred and fifty billions of a potent whooping cought vaccine. Agglutinins, complement fixings and protective antibodies that were controlled by mouse protection tests were subjected to studies in both mothers and their babies before and after inoculations. They studied 200 women by this method, and thirty-two of them and their offspring were subjected to immunologic studies. Every one of the women showed a high titer of immune bodies, which was transmitted in every instance to the baby. The controls showed few or no immune bodies in the newborn.

All past work on this subject seems to indicate that Cohen and Scadron have been able to produce finally a passive immunity against whooping cough in the newborn. They state, naturally, that further studies must be pursued to determine the duration of this immunity. The time is too short to evaluate the duration of the protection afforded, but this is being followed up assiduously.

Their work is to be noted. It represents a new approach in preventive medicine. If our newborn babies can be assured protection against whooping cough for but a few months, a definite lowering of infant mortality will result. It is hoped that this work will be continued and corroborated. (*New York State J. Med.*, June 15, 1942.)

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[1] Cohen, P. and Scadron, S. J.: Paper read before Section of Pediatrics, Meeting of A. M. A., June 10, 1942.

ORIGINAL ARTICLES

SURGICAL TREATMENT OF BILIARY DISEASES*

Harvey B. Stone, M.D.**
BALTIMORE, MARYLAND

The first thing to consider in discussion of biliary diseases from the standpoint of the surgeon is to try to arrive at an understanding of what biliary conditions are properly surgical, and there is a very considerable divided opinion on that point. For instance, I once heard a nationally-known gastroenterologist make the statement that in his opinion "the only type of biliary disorder that was properly treated by operation were those patients who had recurrent, severe attacks of gallstone colic requiring morphine, and in which the roentgenogram showed definite stones." He would limit the surgical field in biliary diseases to that one group of patients. At the other extreme you find the surgical enthusiast who feels that it is perfectly proper to attack the gallbladder in almost anybody who has any digestive symptoms lasting more than three or four weeks. The common sense position is somewhere betwen these two extremes. I thought it might be of interest to detail my personal views as to what does constitute the proper field for surgery in this biliary field.

I should say, and please understand this is not said with any intent to be dogmatic or authoritative, that there are five types of disorders in which surgery is properly applied. The first includes the cases that Dr. Rehfuss recognized as proper for surgery, that is, the patients with recurrent, severe biliary attacks, in whom gallstones can be demonstrated by roentgenogram. As to that group I think there would be few dissenters. In the second important group are those patients who suffer an initial fulminant, severe attack of acute gallbladder disease. For this group there will be a number who feel this is not the proper time to employ surgery, that many of those patients may never have another attack and it is wiser not to operate on them, but to treat them conservatively in the hope that they will never have any more trouble. I can not agree to that, and this point will come up again a little later in the discussion. In the third group are those patients who have never had an intense attack of colic, but do have continuous digestive disturbances of the type that is associated with gallbladder disease, eructation and gaseous distension, epigastric distress and tenderness, pain referred to the back and in whom roentgen study shows either stones or a malfunctioning gallbladder. Again there will be difference of opinion about this group, but I feel they are proper candidates for surgical procedures. The fourth group includes cases of obstructive jaundice or blocking of the biliary tree. The fifth group consists of those patients who are operated on abdominally for some other primary condition, and at the time of operation gallbladder trouble or stones are found, and the patient is in good enough condition to permit extension of the originally planned operation to include surgery of the diseased gallbladder. I submit that those five groups are proper fields for surgical attack.

Before discussing the purely clinical aspects of this condition, I would like to say a word about some of the very interesting pathologic and etiologic factors concerned. We are accustomed, in thinking of gallbladder disease, more or less subconsciously to lay emphasis on the infectious nature of the trouble. Unquestionably it is true that infection is one of the factors which give rise to gallbladder disease. You need ask no further proof than the fairly often demonstrated fact that, in a patient who has had typhoid fever in the past and develops gallbladder disease, it is frequently possible to obtain from the gallbladder or from stones in it pure cultures of bacillus typhosus, and in many cases you can get a positive culture of some of the pyogenic organisms.

I would like to point out, however, that infection is not the only etiologic factor and it may not be present at all, because a number of case studies have shown that definitely. Even in the clinically acute gallbladders, in which their contents look purulent, no positive growth of bacteria may be obtained, and even from walls of such gallbladders sometimes there is a failure to cultivate any bacterial agent.

There are other factors which may produce biliary disease. One of these is a disorder of metabolism. This is not the place and I cannot discuss in detail the relation of metabolic disorder to gallbladder disease, but there is enough known to say that disturbances in fat digestion and absorption could play a part in disorders of the gallbladder.

A third factor of importance, particularly in the acute, fulminating disease, is vascular disturbance of the cystic vessels at the neck of the gallbladder, where pressure from a stone in the cystic duct or something else interfering with the blood supply of the gallbladder may cause acute necrosis of the gallbladder from pure blood supply disturbances. Another source of gallbladder disease is purely chemical. Bisgard and others have shown that in certain animals and in the human being one can demonstrate the likelihood that a reflux of pancreatic juice from the neighborhood of the papilla up into the biliary tree may set up an acute chemical irritation and inflammation of the gallbladder. Thus these various pathologic factors, any or all of them, may enter into production of the disease.

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*Read before the Sommer Memorial Lecture Course, University of Oregon Medical School, Portland, Ore., March 23-25, 1942.

**Associate Professor of Surgery, Johns Hopkins University School of Medicine.

As to diagnosis, it seems foolish to go through a textbook description of the usual picture of various types of gallbladder disease. There are certain special points I would like to emphasize. One already referred to is an antecedent history of typhoid fever. In connection with metabolic disturbances it is noteworthy that these people are often obese and frequently have gone through multiple pregnancies. That is the "fair, fat and forty" expression which is traditional and has become firmly fixed in the textbooks. While roughly true, it must be taken with the understanding that there are many exceptions. In the first place, gallbladder disease in the thirties is not uncommon and even in the teens is not unheard of, and everyone with much experience has seen people with proved gallbladder disease who, instead of being fat, were notably thin.

Concerning diagnosis of the acute, fulminating cases, usually there is no difficulty in recognizing that some very serious, acute inflammatory disorder is present in the upper right quadrant of the abdomen. These people have fever, leukocytosis, extreme tenderness, rigidity and muscle spasm and all the signs of an acute, intraabdominal, inflammatory process. But I have operated on at least one case with the diagnosis of acute, perforated, duodenal ulcer which turned out to be an acute gallbladder. And the opposite mistake I have made two or three times. I have operated with the diagnosis of acute gallbladder and found it was an acute appendix lying high, and once or twice it was a perforated ulcer. Thus, while I have a strong opinion that the particular case may be an acute gallbladder, nevertheless it is quite possible to make mistakes in the differential diagnosis. It is consoling to recall, however, that the conditions which may be mistaken for each other all require substantially the same treatment of laparotomy.

In the interval cases not seen in the acute phase, there is one point that I think deserves particular emphasis. The actual physical examination of such patients may be completely negative, and it is not an exaggeration to say that usually it is completely negative so far as any definite clinical evidence of gallbladder disease is concerned. These people, seen in the intervals of colic or who never have severe attacks but have all the digestive disturbances, may have no tenderness, no rigidity even in the upper right quadrant or anywhere in the abdomen, so that there is not a single objective finding that you can put your fingers on. In such cases the diagnosis must be made by a careful and accurate history, supplemented by roentgen examination.

That leads me to say a word about the importance of the roentgen examination in diagnosis. I doubt whether there is any single laboratory examination which has been such a great boon to abdominal surgery as the dye method of study of the gallbladder, introduced by Graham and Cole. It is of the first importance, and certainly since its introduction our diagnostic capacity in regard to gallbladder diseases has been greatly enhanced. It is only fair to add this word of caution, that in a very few cases the roentgen study may be deceptive. I think it may be so in two directions.

I can recall at least one or two instances in which the roentgen report was quite positive that the gallbladder showed signs of disease and when it was actually explored it was found to be blue, thin walled and compressible, easily emptied, without adhesion to any surrounding structure, without any enlarged lymph node in its neighborhood, with positively nothing indicative of trouble, a normal gallbladder. The other mistake in diagnosis can also be made occasionally on the basis of roentgen findings. The roentgenologist may report that the gallbladder is normal, but when it is explored it may show evidence of disease. I wish to repeat that these occasional failures do not detract from the great importance and value of this study.

In regard to cases with obstructive jaundice, from the standpoint of diagnosis I think the one important decision to make is that the jaundice is due to something other than a simple inflammation and edema of the biliary duct system. In other words, to avoid operation in cases of obstructive jaundice which are not due to stones or any new growth, but simply to cholangitis. Catarrhal jaundice is the traditional, clinical name for that condition. Sometimes it may be difficult to make a positive differential decision between cases of long-standing catarrhal jaundice which runs beyond the usual period of the disease, and cases in which obstruction is really due to some mechanical blockage of the lumen.

As to treatment of these various conditions, I think one can not group them all together. In every case of gallbladder disease a certain period of preparation before operation is highly advisable. That period in an acute, fulminating case may be limited to a very few hours. On the other hand, in cases in which there seems no urgency, I feel it is desirable to have the patient in the hospital for a few days before operation and during that time efforts are made to see that he is well hydrated, that an adequate amount of glucose is administered intravenously or in the form of sweetened fruit juices, and that emphasis is laid on the point recently brought out by Ravdin and his associates that it is highly important for the best condition and functioning of the liver that the patient be provided with ample protein intake. A high caloric, protein, low residue diet with plenty of water is the basic treatment in preparation for surgery of these interval cases.

It is not uncommon to find gallbladder disease in association with other rather grave constitutional disorders. It occurs in a group of people who are approaching elderly or middle-age, many of whom have coincident physical difficulties. They may have arteriosclerosis; it is not uncommon to find associated diabetes; they are often obese and often have high blood pressure. In gallbladder cases with these coincidental disorders more than the customary two days is necessary to prepare them. The patient with diabetes and gallbladder disease may require a regime of two or three weeks before he is fit for operation.

In regard to anesthesia, many surgeons favor use of spinal anesthesia for gallbladder work. Personally, I have not felt that was a good thing. I use a basal anesthetic, any one of the numerous forms, as sodium pentothal, avertin or nembutal, and supplement it with some other form of inhalation anesthesia like cyclopropane, ethylene or light ether. I do not use spinal anesthesia for gallbladder work.

In relation to the specific surgical attack on these conditions, the first question that arises, and one which is perhaps in more dispute than any other, is when to operate on patients who have acute, fulminating gallbladder attacks. Until fairly recently there was a pretty uniform opinion among surgeons that the proper method of handling these patients was to put them in the hospital under observation and conservative treatment until the intensity of the acute attack had subsided, and then to operate in the free interval. In the last ten or fifteen years there has been an increasing volume of divergent opinion on that point. I think probably the majority of surgeons in this country still lean toward the deferred operation. I prefer prompt operation in these cases.

I was lead to this conclusion by the coincidence that within a week under my personal observation two doctors with gallbladder disease had this experience. One with an acute gallbladder attack was treated conservatively in the hospital. His acute attack subsided; his temperature became normal; he was apparently well. He was sent home to rest a few days with the idea that he would come back and have his gallbladder removed. He had been home less than a day when there was a violent recrudescence of all of his symptoms. He came back to the hospital much worse and his condition became so alarming that he was operated upon and was found to have a perforated gallbladder with a small abscess. Another was being carried along conservatively. He never got any better but became steadily worse. One afternoon I got a message from his medical attendant to come and see him as he looked pretty bad. I found his blood pressure had fallen, temperature had steadily increased, leukocyte count between 25,000 and 30,000, exquisitely tender in the upper right quadrant. He was operated on at once and found to have an almost totally gangrenous gallbladder.

I am perfectly certain that in every acute, severe gallbladder attack there exists the potentiality of necrosis, gangrene, perforation, abscess, peritonitis and death. I am quite willing to admit that the great majority of such cases do not progress that way; they subside under treatment, but a certain number do progress.

One objection which has been made against prompt operation is that, if you operate in the acute cases of cholecystitis, you run the risk of spreading infection. When I was speaking about etiology, the point was made that many of these cases have no organisms. In many such cases I can honestly say I have never seen the slightest evidence that prompt operation spread infection. Indeed, I feel that preventing the spread of infection is obtained with greater certainty by taking out the diseased gallbladder than by hoping it is not going to rupture. The objection that the technic of removal is more difficult in acute cases is not true. I find it is easier to follow planes of cleavage in the gallbladder which is edematous from acute, inflammatory process, than to dig out one in which this has been allowed to subside, edema has gone and has been replaced by dense scar tissue. I wish to qualify the statement that prompt operation should be done by saying that a short period of time is desirable, in which the patient is given intravenous fluids and some morphia, and allowed to rest unless he is in the gravest condition.

For many years there existed a violent controversy about the question of what to do at operation. Some surgeons felt the safest, simplest and best operation was to open the gallbladder, remove the stones and insert a drain. That controversy is now only of historical interest. At present the almost unanimous opinion is that the desirable operation is removal of the gallbladder. But there are two conditions which may make removal ill advised. One is the patient's general condition. I operated on a patient a number of years ago whose first baby was about six or seven days old when she had an acute, fulminating gallbladder attack. Local anesthesia was used because I felt sure she would not survive a general anesthetic. Upon entering her abdomen, I met a good deal of free pus and three or four gallstones floating loose. The obvious thing to do was to drain the area around the gallbladder as well as the gallbladder itself and get out as quickly as possible. The woman had the good fortune to recover. Here it would have been folly to undertake prolonged operation. There may also be local conditions in which the difficulty of removal may make it unprofitable to undertake. The gallbladder may be so densely adherent to the duodenum, to the hepatic flexure or some other structure that the time required and hazard involved in complete dissection is too big a price to pay for what one gets in return. In such instances it is good sense to forego the ideal operation, drain the gallbladder and be satisfied with that for the time at least.

Handling of the common duct is a controversial subject. Two or three leaders of surgical thought have urged a much more frequent incision into it than has been customary. The reason has been the occurrence after operation of subsequent trouble, due to stones in the common duct. It is embarrassing to operate on a patient, remove the gallbladder and have him return in a short time with an acute attack of biliary colic, pain and jaundice. This has occurred in the hands of every surgeon doing much of this work.

I am sure it was such occurrences that made Dr. Lahey of Boston feel that a more frequent, direct incisional exploration of the common duct was desired. His last publication that I recall stated he was operating on the common duct in about forty-seven per cent of all his gallbladder cases. He was finding more stones in the common duct than were formerly discovered by the ordinary methods of examination without incision. But he traumatized the common duct unnecessarily in many cases where no stones were found. The damage done to the common duct by unnecessary exploration and the prolongation of morbidity more than offset the gain obtained by finding those additional stones.

It is a matter of judgment, and I may be forced to change my views from accumulating evidence, but at present I am inclined to be guided by the belief that the common duct should be explored as carefully as possible without incision. If you feel a stone, if the duct is widely dilated, if it is thick walled, if the patient has had recurrent attacks of jaundice, if you aspirate the common duct with a fine needle and instead of withdrawing clear, golden bile you get dirty bile, under any of those conditions I think the common duct should be completely explored and evacuated. But in the absence of any of those findings I do not think it should be explored purely as a routine step of the operation.

Another debatable question is whether it is desirable at time of the gallbladder operation, not only to open the common duct but forcibly to dilate the papilla of Vater and the sphincter of Oddi. Dr. A. W. Allen of Boston and others have advocated this procedure, following the lead of certain former Austrian surgeons, the idea being that, if any small fragments of stones are overlooked or if new stones form promptly, the dilated duct will allow them to pass into the duodenum, and stretching the muscles will stop the occurrence of the condition which simulates a stone left in the common duct, but which is really due to spasm of the sphincter of Oddi. This is the so-called dyskinesia of the papilla of Vater. It has seemed to me unwise and dangerous to carry the forcible dilatation of the papilla to the extreme that Dr. Allen advises. Like every surgeon who opens a common duct, I make the effort to pass an instrument through the lower part of the duct into the duodenum, but forcible overstretching of the opening seems questionable.

What should be done with obstructions of the common duct caused by malignant growths? If the gallbladder is present, making a new opening between it and the intestinal tract or the stomach will often relieve the patient's jaundice, stop itching, improve digestion, and make him much more comfortable. It is not always easy to be sure the patient has a carcinoma at the head of the pancreas. We have a local saying among surgeons in Baltimore that cases of carcinoma of the head of the pancreas, on which has been done one of these cholecystoduodenostomy operations that live two years or more, were chronic pancreatitis in the first place. Recently Dr. Whipple of New York and his numerous followers introduced the idea of not merely a palliative approach to carcinoma at the head of the pancreas but the definite effort to remove it radically. His ingenious operation removes the head of the pancreas, first and second portion of the duodenum, papilla of Vater and lower end of the common duct in the effort to cure the carcinoma in the pancreas. This is a little off the subject of this paper but I wish to bring to your attention that the surgical frontier in this field is advancing. So far there have been a few encouraging cases which have given promising results.

Finally, what kind of results do you get in gallbladder surgery? The best I think are obtained in the first two types of cases described. First, those in which the patient has recurrent, severe biliary colic with demonstrable stones in the gallbladder as shown by roentgenogram. In those cases where the stones are limited to the gallbladder, the common duct is free and successful cholecystectomy is done, the results are highly satisfactory in a great percentage of cases. The same can be said about the second group of cases, in which operation is done for acute, fulminating gallbladder disease. These, as a general class, give very satisfactory results.

In the third group, patients who have had long standing indigestion in which the roentgenologist reads either "stones in the gallbladder" if he thinks he sees them, or "a nonfunctioning gallbladder," the results are not nearly so satisfactory. Many of these patients still have the digestive disturbances they had before operation. I don't think that it is altogether right to say that the poor results are due to failure of the operation. It is much more accurate to say the diagnosis was wrong more often than in the first two classifications. In other words, these cases were not clear-cut like the others. The diagnosis is more doubtful and often the disease in the gallbladder is a questionable finding.

The worst results are obtained in those patients whose trouble is malignant disease in the head of the pancreas, in the gallbladder itself or in the common duct. It is the rarest thing that a successful, permanent cure is obtained when the operation is undertaken for such conditions that may be recognized before operation. If you know beforehand that the patient probably has one of these malignant conditions, the chances of curing him are extremely slight. The only cases in which cancer of the gallbladder is apt to be cured are those rare ones in which the gallbladder was removed for stones and the pathologic examination disclosed presence of an early cancer also.

LESIONS OF VITAMIN A DEFICIENCY*

THEIR LOCAL CHARACTER AND CHRONICITY

JON V. STRAUMFJORD, M.D.
ASTORIA, ORE.

The purpose of this paper is to call attention to the local character and chronicity of some of the lesions of vitamin A deficiency and to certain theoretical implications of this behavior of the lesions. In the current clinical attempts to discover and evaluate early signs of vitamin A deficiency, sufficient consideration is not given to these fundamental aspects.

Youmans[1], quoting Szent-Gyorgyi[2], stated that "it is unlikely that many additional, important, essential food factors remain to be discovered or that important, hitherto unsuspected relationships between nutritional deficiencies and clinical syndromes will be disclosed." While the first part of this statement may be true, I believe the second is not justified in the present state of knowledge. Important chronic insidious impairment of function and change in anatomic structure may result from suboptimal intake which may not be suspected from the results of the relatively short periods of observation in man and from the results of animal experiments, often terminating in catastrophic death of the animals, which form the basis of most of our knowledge of these relationships.

It is of great importance to recognize that both in experimental and clinical vitamin A deficiency the lesions occur in certain areas only and that throughout the deficiency, even when it is extreme, they are relatively local in character and areas of similar histologic structure are not uniformly affected[3]. Although the histologic changes are of uniform character in different species of animals, the extent and site of involvement vary greatly.[4] Other factors than the deficiency itself must, therefore, determine the location of the lesions.

The effect of the administration of large doses of vitamin A in man has been studied, for the most part, only during short periods of observation and the great chronicity of some of the lesions of vitamin A deficiency has not been fully appreciated.

Vitamin A deficiency, as observed clinically, is certainly not a single episode of deficiency, in which an orderly progression of signs and symptoms is observed. It occurs as recurrent episodes of deficiency, interrupted by periods of relative sufficiency and partial recession of the lesions of the deficiency. This incomplete recession of the lesions is due to the chronicity of some of them. A person, therefore, may present signs of the deficiency which have recently developed, along with signs which have been present most of his lifetime. The behavior of night blindness and follicular hyperkeratosis is illustrative of this. Night blindness, in general, is corrected quickly[5], while follicular hyperkeratosis may require years for its correction. It is obvious that tests for vitamin A deficiency, utilizing disturbance in dark adaptation as a criterion, are not sufficient, because the disturbance in dark adaptation is not present during the entire course of the deficiency.

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*From the Clinical Studies Foundation, Inc.

[1] Youmans, J. B.: Nutritional Deficiencies, p. 5. J. B. Lippincott Company, Philadelphia, 1941.

[2] Szent-Gyorgyi, A .V.: On Oxidation, Fermentation, Vitamins, Health and Disease, The Abraham Flexner Lectures, Series Number 6, Williams & Wilkins Company, Baltimore, 1939.

[3] Mellanby, E.: Skeletal Changes Affecting Nervous System Produced in Young Dogs by Diets Deficient in Vitamin A, J. Physiol. 99:467-486, June 30, 1941.

[4] Bessey, O. A. and Wolbach, S. B.: Vitamin A; Physiology and Pathology, J. A. M. A. 110:2072-2080, June 18, 1938.

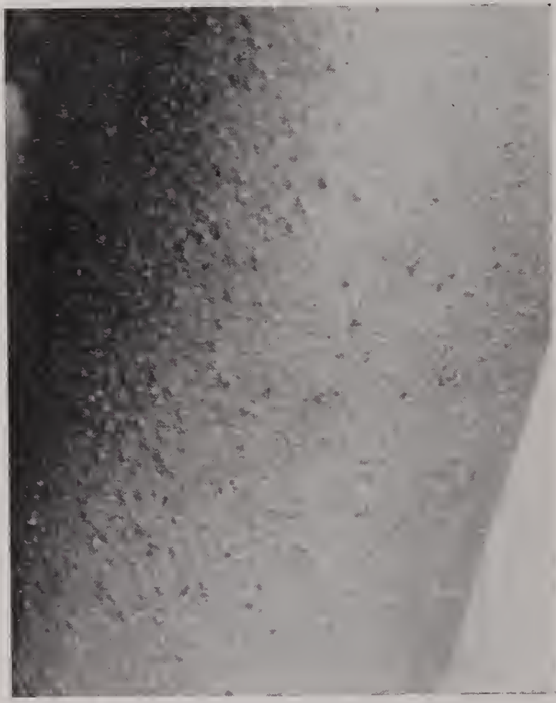

Fig. 1. Follicular hyperkeratosis. Lateral aspect of upper arm of an otherwise normal girl of 14.

During the past four years I have observed in a large number of patients the effect upon various clinical conditions of a daily oral intake of 100,000 units of vitamin A. A large number of patients with follicular hyperkeratosis have been followed, many over a period of four years. This cutaneous abnormality is an extremely common condition, generally only the more marked instances (fig. 1) being recognized as a manifestation of vitamin A deficiency[6] and most of these instances are dismissed in medical practice as hereditary or congenital ichthyotic changes. The milder degrees of follicular hyperkeratosis[7] are largely overlooked. The response to vitamin A administration is extremely variable. In some patients the lesions disappeared in a few months, while in others they are still present, although greatly diminished after a four-year period of continuous daily oral intake of 100,000 units of vitamin A.

During the course of these observations on the recession of the lesions of follicular hyperkeratosis, I have noted the gradual disappearance of lesions of other conditions at the present time not attributed to vitamin A deficiency, such as corns, keratoses, and acne vulgaris. A histologic feature common to these conditions is local increase in cornification. The incidence of the common cold and the course of chronic sinus infection are likewise so definitely influenced, when this dose is given over a period of two years or more, that it is difficult to escape the conclusion that insufficient intake of vitamin A plays an important part in their pathogenesis.

Investigation of vitamin A deficiency in human beings has been mainly occupied with detection and establishment of early signs of the deficiency and has involved chiefly the determination of intake, absorption, blood levels and liver storage of vitamin A and a study of such local changes as dysadaptation,[8] follicular hyperkeratosis[9] and conjunctival xerosis[10]. Little attempt has been made to understand other essential factors which may determine the localization, course and recession of the lesions of the deficiency. The need for comprehensive knowledge of these factors is indicated by the almost universal prevalence of some degree of follicular hyperkeratosis and the high incidence of conjunctival xerosis and other lesions of the deficiency.

Since vitamin A, unlike vitamin B, is not water soluble, it is not readily diffusible in tissue fluids. It is stored apparently only in certain types of lipoids in relatively localized deposits in the body.[11] The factors which determine its deposition, mobilization[12] and distribution[13] are largely unknown.

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[5] Wald, G., Jeghers, H. and Arminio, J.: Experiment in Human Dietary Night-Blindness, Am. J. Physiol. 123:732-746, Sept., 1938.

[6] Frazier, C. H. and Hu, C. K.: Cutaneous Lesions Associated with Deficiency in Vitamin A in Man, Arch. Int. Med. 48:507-514, Sept., 1931.

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[11] Popper, H.: Histologic Distribution of Vitamin A in Human Organs Under Normal and under Pathologic Conditions, Arch. Path. 31:766-802, June, 1941.

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But since it is not readily diffusible in tissue fluids and since it is carried by the blood, it follows that the blood supply of a given region or tissue must determine to an important extent the tendency toward the development of the lesions of vitamin A deficiency. The lesions are not likely to develop where the blood supply is abundant. Factors which decrease the blood supply will tend to decrease the supply of vitamin A and thus accentuate and localize the deficiency.

Follicular hyperkeratosis has a characteristic distribution, occurring on the back, elbows, buttocks, calves of the legs and posterolateral aspect of the thighs and arms. This distribution cannot be explained on purely anatomic grounds. A little reflection, however, reveals that the areas in which follicular hyperkeratosis occurs are the *surfaces upon which the weight of the body rests during sleep*. Follicular hyperkeratosis appears also in the areas of pressure from brassiere straps in women and from the belt in men. Mechanical pressure diminishes the supply of blood and vitamin A to the areas involved with resultant localization of the lesions.

Corns and callosities are generally attributed to the action of intermittent pressure over bony prominences, leading to dyskeratotic changes in the epidermis[14]. The mode of action of mechanical pressure in production of hyperkeratotic changes has been largely dismissed by classifying it as "irritative," whatever this might mean. Interference with nutrition of the epidermis has been vaguely indicated but readily dismissed because of the "protective" nature of callosities.

Kromayer,[15] however, was impressed with changes in the blood vessels of the skin and stressed "the sclerosing of the connective tissue of the cutis vasculosa and consequent changes which are irreparable and make therapy illusory, for the callosity is stimulated to continual regeneration by this sclerosis." Constitutional factors have been suggested but prevalence of the condition has been thought to indicate the unlikelihood that such factors could be important. Nutt[16] stated that "in some cases it may be noted that the skin seems to produce corns with extraordinary facility and will not tolerate pressure which would cause no disturbance in other cases. . . . In pityriasis rubra pilaris corns are easily formed." This statement is interesting in light of the reported relation of pityriasis rubra pilaris and vitamin A.[17]

In many patients who have taken 100,000 units of vitamin A orally over a long time, the disappearance of corns and callosities has been observed. This occurrence is so regular that it cannot be ascribed to fortuitous changes in foot-wear, occupation or other such factors. The rate of response, however, is extremely variable. At times, massive desquamation occurs relatively quickly (fig. 2). In general, the effect is not observed until after a lapse of many months to two or three years.

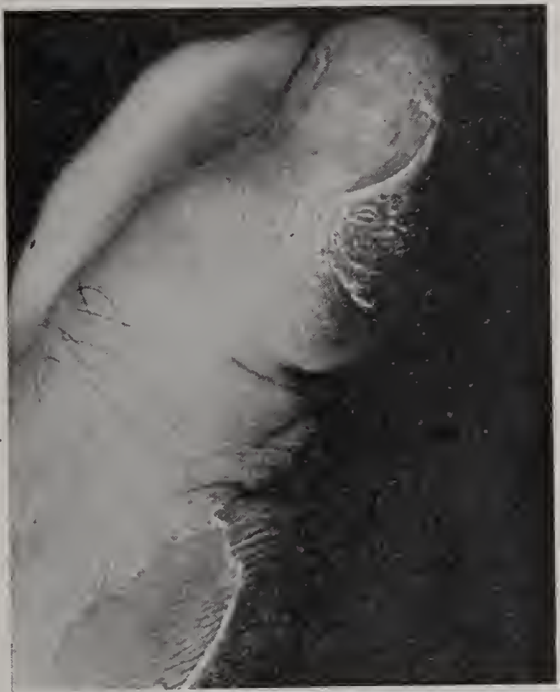

Fig. 2. Callosities in process of separation three weeks after patient (female, age 21) began taking 100,000 units of vitamin A daily.

ILLUSTRATIVE CASE

Female, age 37, a nurse, had had corns since about the age of 15 years. She took daily at bedtime one capsule containing 100,000 units of vitamin A. In three weeks most of her corns began to disappear (fig. 3) and in two months they had completely disappeared (fig. 4).

These observations of the behavior of follicular hyperkeratosis, corns and callosities indicate a fundamental relation between the lesions of vitamin A deficiency and the volume of the circulating blood. Diminution in blood supply tends to cause the lesions to appear while increasing the level of vitamin A in the blood tends to cause them to disappear, even though the volume of the circulating blood in the area remains diminished. It is obvious, therefore, that there is no necessary strict

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[13] Josephs, H. W.: Studies in Vitamin A; Relation of Vitamin A and Carotene to Serum Lipids, Bull. Johns Hopkins Hosp., 65:112-124, July, 1939.

[14] Lake, N. C.: The Foot, Williams & Wilkins Co., Baltimore, 1939.

[15] Kromayer: Allgemeine Dermatologie, p. 153. Cited by Jarisch, A.: Die Hautkrankheiten in Nothnagel, H.: Specielle Pathologie and Therapie, ed. 2, vol. 24 (1), p. 659. Alfred Hölder, Wien und Leipzig, 1908.

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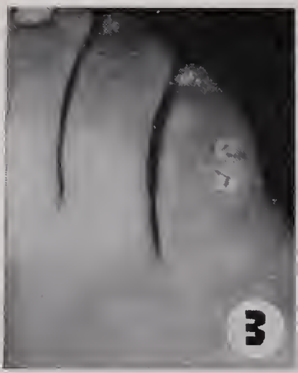

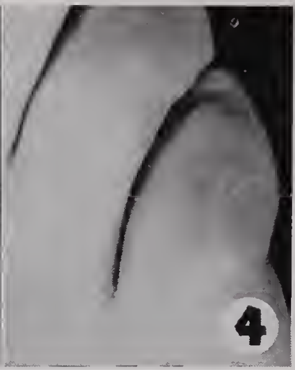

Fig. 3. Corn on right little toe in process of separation three weeks after patient began taking 100,000 units of vitamin A daily. This area of the toe had been the site of a corn for twenty-two years.

Fig. 4. Same toe five weeks later.

relation between the presence of a corn and night blindness, follicular hyperkeratosis or vitamin A-labile threshold. A local lesion of vitamin A deficiency may thus be present in the absence of these manifestations.

It is readily seen that development of the lesions of vitamin A deficiency may be determined in an important way not only by mechanical pressure but also by any other condition which affects the volume of the circulating blood in the area involved. The dry hyperkeratotic skin in hypothyroidism, for example, is corrected by administration of thyroid extract. The increased peripheral circulation resulting from the intake of thyroid extract[18] must increase the cutaneous supply of vitamin A, quite apart from other effects of the thyroid extract such as increased conversion of carotene into vitamin A. Many other agents affecting the peripheral circulation can be readily conceived of as affecting the cutaneous supply of vitamin A. The important element in this consideration is that development of the lesions of the deficiency may result from local disturbances in the blood supply and their cure may come about by improvement in the local circulation.

Since vitamin A is not a readily diffusible substance, we must also consider the further possibility that local conditions in the tissue may lead to interference with its utilization or to its local destruction, thereby producing a deficiency. Facial keratoses which develop in farmers and sailors may illustrate this local destruction. Vitamin A is destroyed in vitro by ultraviolet light.[19] It is readily conceivable that the ultraviolet component of sunlight, acting upon the skin, destroys vitamin A locally. This destruction will lead to a local deficiency because vitamin A is not readily diffused from the neighboring areas and it appears to be brought with difficulty to the skin.

Vitamin A combines in vitro with certain compounds of arsenic.[20] Ingested arsenic is deposited in the skin[21] and it is interesting to note that follicular hyperkeratosis and keratoses[22] of the soles and palms develop in certain individuals following the administration of arsenicals. Numerous other similar examples might be cited to indicate that many agents and substances may produce a local vitamin A deficit by their local action upon it.

The continued normal activity of certain cells demands a continued minimum supply of vitamin A. The requirement of one type of cell may be greater than that of another and may differ at varying rates of metabolic activity. Increase in local requirement may lead to development of local lesions of deficiency. Cellular multiplication will reduce the amount of vitamin A available for each resultant cell unless there is a concomitant increase in the supply of vitamin A. The adequacy of the supply of vitamin A to any given region, therefore, depends upon the ratio of the rate of supply and the rate of utilization or destruction in the given tissue or region.

Because of the nondiffusibility of vitamin A and the many factors which influence its vascular transport, the lesions of the deficiency may develop as a result of a large number of apparently unrelated factors such as a deficiency in the thyroid hormone and pressure of a shoe. General tests for vitamin A deficiency will then have value only when positive. When negative, however, they will not exclude the possibility of the presence of local lesions of vitamin A deficiency. Vague concepts of "dysvitaminosis A"[23] should not replace attempts to elucidate these phenomena.

The histologic character of these lesions and their disappearance following prolonged intake of large doses of vitamin A indicate that they result from its local deficiency. When attention is focused upon this local character of vitamin A deficiency, many unsuspected lesions, I believe, will be found to result from low local levels of vitamin A. It should be pointed out, however, that disappearance of these lesions in response to the administration of large doses of vitamin A does not define without further study what its normal optimum intake should be. We must also bear in mind that vitamin A may be a cellular structural component, resembling, perhaps, in this respect some of the essential amino acids and the need for growth and replenishment of tissue depletion may differ widely from maintenance requirements.

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[18] Stewart, H. J. and Evans, W. E.: Peripheral Blood Flow in Myxedema as Compared with that in Hyperthyridism, Am. Heart J., 23:175-184, Feb., 1942.

[19] Titus, R. W., Hughes, J. S., Henshaw, W. R. and Fitch, J. B.: Destruction of Vitamin A in Milk by Ultra-Violet. Indust. & Engin. Chem., 18:843, 1926. Chevallier, A.: Sur La Destruction de la Vitamin A par les Rayons Ultra-Violets, Compt. rend. Soc. de Biol., 112:1681-1683, May 5, 1933.

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The method of reasoning in the above analysis of the mode of development of the lesions of vitamin A deficiency can be expanded into the hypothesis that proliferation, stratification and keratinization indicate low local levels of vitamin A and that wherever these histologic changes are found, as normal or abnormal structures, they may be brought about by low local vitamin A levels. A histologic structure then becomes an indicator of the level of vitamin A.

Such hypothesis, even though ultimately proved erroneous, may have great investigative utility in focusing attention upon a fundamental histologic characteristic common to many conditions which are brought about by numerous apparently unrelated processes. The processes may culminate in the same end-result through their effect upon the local levels of vitamin A. Whether it be because of insufficient intake of vitamin A, interference with its absorption and transport, its local destruction or local increased demand, the same cellular response occurs—proliferation, stratification and ultimate keratinization.

This histologic indicator can be applied to the role of vitamin A in the histogenesis of the normal epidermis. As the epidermis develops, proliferation of an undifferentiated epithelium occurs which gradually becomes more stratified and ultimately keratinized[24] as the cells are farther and farther removed from their source of supply of vitamin A. Formation of the normal epidermis then represents a process of increasing deprivation of vitamin A.

The metaplastic epidermoid epithelium in experimental vitamin A deficiency represents the same process. When in the skin the deprivation becomes greater than normal, there results abnormal cornification which is a part of the same physiologic response found in the normal skin. If this view is correct, there must exist in the corium a mechanism which brings about low levels of vitamin A. The existence of such a barrier perhaps explains the slow recession of the abnormal hyperkeratinizations in the skin.

With these considerations in mind, it is apparent that the prevalence of vitamin A deficiency may far exceed the estimates made on the basis of such tests as dysadaptation. The lesions of the deficiency may be extremely chronic, variable in location and local in character, and long periods of observation of the effect of therapy are necessary for its evaluation.

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VITAMINS ARE NOT WHAT I THOUGHT

Lloyd L. Ely, M.D.*
GLENDALE, CALIF.

Some months ago a physician friend visited me upon his return from England, where he had just qualified for a Ph.D. in biochemistry. In answer to my question as to what he had found of interest in biochemistry, he replied, "enzymes" and when I asked, "what are enzymes?" he replied, somewhat inelegantly, though expressively, "they are what make you tick." After his visit I tried to learn something about enzymes but, finding the subject largely in the hands of biochemists who wrote voluminously about oxidation-reduction, oxygen uptake, hydrogen transport, DPH, TPH, catalysts, dehydrogenases, coenzymes, catatorulin effect, cytochrome and phosphorylation, I somehow recognized that the matter was probably important but of little practical significance in clinical medicine.

Lacking the necessary spark of inspiration to look further into the subject purely as a matter of mental discipline, I all but dropped it until circumstances obliged me to consider the relationship between thiamine (vitamin B_1) and carbohydrate metabolism. The spark of necessity substituted for the spark of inspiration and drove me again to the literature. This time I was amply rewarded, for, in exploring the published evidence on the B_1 carbohydrate relationship, I was formally introduced to pyruvic acid as an important intermediate product in the metabolism of carbohydrate.

How such a familiar substance as dextrose ever becomes transformed into such a stranger as pyruvic acid is another story, but I learned that in the body's inexorable objective to derive energy from fuel it attacks the dextrose molecule and ultimately, through a series of shifts and passes of the oxygen and hydrogen atoms, the dextrose molecule is whittled away until only carbon dioxide and water remain. In the union between two atoms of hydrogen and one of oxygen sixty-eight calories of energy are made available. The release of this energy is the purpose of the game.

Returning to the pyruvic acid stage in the breakdown of the dextrose molecule I found an old acquaintance. He had formerly interested me a great deal but in recent years he had been so much "in the papers" and "on the air" that he had come to be very boring. Many of my physcian-friends had also suffered ennui when his name was mentioned. But here he was again, though now quite happily disguised. In fact, he was traveling under an alias, indeed, several aliases. When I showed signs of recognition he explained, honestly as I found out later, that although I previously had known him as vitamin B_1 he was, in a slightly modified form, equally or better and variously known to others (biochemists)[1,2] as thiamine pyrophosphate or cocarboxylase; to these old friends he was known by the nickname, "coenzyme."

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*Medical Director, Don Baxter, Inc., Glendale, Calif.

He further explained that, although I previously had known some of the things he could do, I had not shown much curiosity as to how he did them. He then brought up one of his companions and introduced him as his very, very intimate coworker, named "carboxylase." His nickname was "enzyme" and it turned out that I had a speaking acquaintance with some of his distant relatives, pepsin and trypsin. The family is large and growing. It seems that, since the beginning of time enzyme and coenzyme have constituted a very effective team in breaking down the pyruvic acid fragment of the dextrose molecule.

Now, it is obvious that work cannot be accomplished unless a source of energy is provided; dextrose is an excellent source and energy from it is released when the molecule is broken down to the point at which two activated hydrogen atoms combine with one activated oxygen atom, to form water. The enzyme family takes a big part in the activation ceremonies. If the combination of hydrogen with oxygen occurs too directly, the entire sixty-eight calories of energy are released at once but this would cause a violent reaction[3].

Consequently, the Master Biochemist, who arranged all of these things in the beginning, provided that a long series of chemical reactions must take place in the body before the two atoms of hydrogen are allowed to combine with one atom of oxygen. These reactions involve a step-by-step transport of hydrogen from the original dextrose molecule (oxidation) which is "carried" along to other receptive molecules (reduction) and finally combines with activated oxygen (oxidation). Thus the total energy of sixty-eight calories is gradually released at the rate of about eleven calories per step and no explosions occur. In working out this plan the Master Biochemist, with the aid of the energy dispensing sun, locked up a supply of energy in the dextrose molecule and then devised a system whereby that energy could be gradually released. This cycle of events goes on and on, and in reality it constitutes the fundamental process of Life. If there is a break in the cycle, "the very first thing you notice is that you are dead."

The story as told here refers only to one small and late phase of dextrose break-down, in which vitamin B_1 is operative. There are several other phases involving other vitamins. Recognition of the nature of their biologic role removes vitamins from the list of things that bore me and places them in the list of things that fascinate me. Should there be other physicians who have become figuratively fed-up with vitamins, they, too, may experience a new and delightful hunger, if they will view the subject from the broad perspective of enzymes. Szent-Gyorgyi's little book is an entertaining introduction to the subject.

A point of practical, clinical interest in this story is that it rationalizes the observation that carbohydrates, especially when given intravenously as dextrose, puts extra demands upon available supplies of thiamine[4]. There are still broader implications in these observations. Sulfonamide compounds and vitamins are probably the two most talked about therapeutic agents today and there is reason to believe that sulfonamides act through an enzyme mechanism. Thus the field of enzymes is so big that it already embraces certain vitamins and sulfonamide compounds.

It appears certain that further cultivation of this field will yield new knowledge of disease and its treatment[5,6,7]. It may shed new light on the mechanism of toxicity of certain therapeutic agents and environmental contacts and how such toxicity can be corrected. I believe my friend was right when he said, "enzymes are what make you tick."

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ROENTGEN DIAGNOSIS OF LESIONS OF THE GASTROINTESTINAL TRACT*

George W. Holmes, M.D.**
BOSTON, MASS.

Recent advances in roentgen diagnosis of gastrointestinal diseases are for the most part based on development of the aimed-film technic of Berg, studies of the mucosal relief of Fossel and others and introduction of the Miller-Abbott tube. To these might be added a better understanding of the changes, both anatomic and physiologic, occurring in the small bowel in certain deficiency states.

In order to take full advantage of these modern methods it is necessary that the roentgenologist be equipped with the latest type of apparatus and that he be prepared to spend considerably more time in examination of the individual patient than has been the custom in the past. All of this adds to the cost of the examination, and there is real need at present for a simple, inexpensive method of gastrointestinal examination which could be used in survey work, similar to that being used in examination of the chest. The more complicated and expensive procedures which I am about to discuss could then be reserved for the more difficult cases, those in which the findings do not agree with or adequately explain the symptoms.

All of us realize that there are two reliable methods of determining the presence or absence of early malignant disease in the gastrointestinal tract, the radiologic and the gastroscopic methods. With the recent advances that have taken place in surgery in mind, it seems that the only opportunity for cure of gastric cancer is in early diagnosis of the disease.

In order to understand the problem it is necessary to go over briefly some of the technical factors. An adequate roentgenologic examination of the gastrointestinal tract must include both a fluoroscopic study and taking of films. There is no longer any question regarding the value of the fluoroscopic and radiographic methods; both are necessary and complementary. The so-called serial film technic, developed by Gregory Cole of New York, has been replaced largely by aimed films taken during fluoroscopic observation. To carry out this technic as it was described by its originators it is necessary to have the apparatus so arranged that instantaneous exposure may be made during the fluoroscopic observation. The suspected area is seen on the fluoroscopic screen at the time the film is taken. Usually several exposures are necessary, the patient being placed in more than one position, and advantage is taken of palpation to bring out the lesion. It is rarely possible to demonstrate by this method a lesion that is not visible on the fluoroscopic screen, but a wealth of detail can be obtained which may add materially to the diagnosis. Unless the films are taken by the fluoroscopist during the fluoroscopic observation, this method has no advantages over the older, serial technic.

Carmen of the Mayo Clinic many years ago called attention to the importance of studying the appearance of the mucosal folds with small amounts of barium in the viscus, but it was not until the introduction of the aimed-film technic that radiographs of the mucosal pattern became a routine procedure. Detailed radiographs of the mucosal pattern have made possible a better understanding of these important structures than could possibly be obtained by fluoroscopic examination alone. Small lesions which are overlooked when the viscus is completely filled are often demonstrated easily when it is empty or nearly so. This is particularly true of the colon. Examination after evacuation of the barium enema is often more informative than when the colon is filled. The aimed-film method with mucosal studies has made possible recognition of gastritis as a common gastrointestinal disease. This method has also enabled us to recognize small polyps in the stomach or intestinal tract before malignant degeneration takes place.

The roentgen examination without use of a contrast medium has become a factor of considerable importance in diagnosis of acute abdominal disease. When properly carried out, this is a safe procedure even with very sick patients, and may give the clinician important information. Even a patient with bleeding ulcers can be examined safely. Such an examination may give the clinician important information and to some extent it has replaced exploratory laparotomy. In this type of examination it is usually not necessary or desirable to carry out a fluoroscopic observation. A single large film of the abdomen may give all of the information required.

The roentgen diagnosis is based on the amount and position of gas in the gastrointestinal tract, and in some cases the presence of free gas within the abdominal cavity. It is usually possible to state whether or not rupture of a hollow viscus has taken place, whether or not obstruction is present, and the part of the bowel involved. Not infrequently the cause of the obstruction can be determined. Satisfactory films for this work require a short exposure and considerable contrast. They cannot be obtained by using portable apparatus.

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**Roentgenologist, Massachusetts General Hospital.

Recent advances in technic and improvement in apparatus have improved tremendously the quality of the so-called flat film of the abdomen. Schatzki, in discussing the importance of this observation, states that no single film gives so much information. He was able to list over one hundred conditions in which such a film would be of value in the diagnosis. Some of these, exclusive of diseases of the osseous system, are enlargement and malformation of the spleen, changes in size and shape of the liver, abnormalities of pelvic organs, retroperitoneal tumors, tumors of the pancreas, diseases of the urinary tract, carcinoma of the fundus of the stomach and presence of air or fluid in the peritoneal cavity. Until quite recently the small bowel has been a blind spot in gastrointestinal diagnosis. Neither the roentgenologist nor clinician has given sufficient attention to this area as a source of gastrointestinal disease. In a recent paper published in the *Journal of the American Medical Association* the statement was made that the roentgen examination is of little or no value in examination of the small intestine. This statement is a long way from the facts. It is now possible to carry out almost as complete a study of the small bowel as can be done of the stomach or colon. The examination, however, is more complicated and time consuming. Much depends upon observing passage of the opaque meal through all portions of the small bowel. It is not sufficient to observe simply the upper and lower ends as is so often done.

Among the technical procedures used to examine this part of the gastrointestinal tract are hourly observations following examination of the stomach, use of cold drinks and other substances to speed the passage of the meal through the small bowel. If a patient is given a cold drink, the pylorus relaxes and the contents of the stomach passes rapidly into the small intestine. I have seen barium reach the ileocecal valve in as short a time as fifteen minutes, and often in one-half an hour. Most important of all is use of the Rehfuss or Miller-Abbott tube. With this tube it is possible to determine the presence or absence of obstruction. It may be allowed to pass until the obstruction is reached, and a small amount of barium injected through it will then demonstrate the character of the obstruction and its location.

A second procedure was first described by the French several years ago and further developed by Dr. Schatzki of our clinic. It might be called a small bowel enema. It consists of passage of the tube through the pylorus and a short distance into the duodenum. The injection of the barium suspension is then started by gravity and continued until the entire small bowel is visualized. We use a liquid mixture and a considerable amount of it. When properly carried out this procedure causes very little discomfort, though the patient may complain of cramps, and some of the mixture may be forced back into the stomach. In this way one gets an outline of all parts of the small bowel, and the barium does not become diluted as when given by mouth. In the normal patient the head of the column will reach the ileocecal valve in fifteen minutes. These methods of speeding the passage of the opaque meal through the small bowel permit of continuous observation and are particularly valuable in diagnosis of organic lesions.

There are many conditions other than intrinsic organic disease which produce symptoms and changes in appearance of the small bowel. The problem is very complicated and, in my opinion, has not yet been fully established as an important roentgenologic procedure.

I would like to consider some of the more complex clinical problems which require a more careful and prolonged type of examination and in which modern methods of roentgen diagnosis can be of help to the clinician. Perhaps the one most frequently encountered and the most important to clear up is persistent bleeding from the gastrointestinal tract. In our experience the most frequent lesion found in these cases is acute duodenal ulcer. Many show no deformity of the duodenal bulb on examinations conducted in the routine manner. Careful studies of the mucosal patterns of the duodenum, using aimed films, will, however, show a small, persistent fleck with some thickening of the mucosal folds immediately around it. There is no niche and no deformity. These small, shallow, bleeding ulcers are often located on the posterior wall and are best demonstrated with the patient lying on his back. In this position the barium tends to settle into the ulcer cavity and gas from the stomach passes into the duodenum, which helps to bring out the shadow of the fleck.

Another rather frequent cause of unexplained bleeding is esophageal varix. This lesion is usually associated with cirrhosis of the liver and is not uncommon. Here, again, roentgen demonstration requires a study of the mucosa of the lower end of the esophagus and taking of aimed films. Varices are frequently overlooked, if the examination is made in the routine manner with the patient in the upright position. About ten years ago I was fortunate enough to have an assistant who had been trained in Berg's clinic and had made a study of this particular subject. He began to find esophageal varices right away, something we had overlooked.

Another condition which is often missed and which is not uncommon is hernia through the esophageal hiatus, which is occasionally the source of unexplained bleeding. These herniae are easily demonstrated when looked for with the patient in the supine position.

Certain malignant tumors of the stomach, particularly leiomyoma and other tumors which occur in the fundus, may be overlooked, even though they are of considerable size unless the examination is made in the supine posititon and a careful search of the mucosal surface is carried out. Patients with acute or chronic gastritis not infrequently show evidence of blood in the stools and may even vomit blood. The roentgen examination may show retained secretion and definite abnormalities in the size and shape of the mucosal folds. The diagnosis is usually made, however, by gastroscopic examination.

The roentgen examination often fails to demonstrate completely the small bowel. Even large ulcerated areas in this portion of the gastrointestinal tract are easily overlooked as they seldom cause obstruction, and unless an observation is made at the time the barium meal is passing through the involved area, the lesion will be missed. A cause of gastrointestinal bleeding often overlooked is the small polyp, which may occur in any part of the gastrointestinal tract and may be a source of bleeding. Unless the examination is made at a time when the viscus is nearly empty and the walls coated with barium, polyps are very difficult to demonstrate. Palpation under fluoroscopic observation and taking aimed films are necessary. It is also very essential when this examination is made that the portion of the digestive tract to be examined be free from food or retained fecal material.

Another group of cases in which modern methods of examination are particularly valuable are those patients giving a history of repeated attacks of acute intestinal obstruction. This condition is often overlooked and may give the clinician much trouble. Usually these patients do not report for examination until the acute attack has subsided, at which time the roentgen examination is frequently negative. The cause may be intussusception, due to a small pedunculated tumor, frequently a leipoma. These patients often give a history of trouble over several years, and some of them have been explored without a lesion being found. When examined during the attack, the roentgenogram is typical. The lesion commonly occurs in the large bowel or in the region of the ileocecal valve, and is best demonstrated by means of the barium enema.

A group of cases requiring more complete roentgenologic examination are patients with a history and clinical signs suggesting malignant disease in some part of the gastrointestinal tract, but in which no primary tumor can be demonstrated by the usual methods. In this group not infrequently the tumor is primary in the liver or pancreas.

Primary tumors of the liver rarely occur except in the presence of cirrhosis, and a careful search of the esophagus for varices will often lead to a correct diagnosis particularly if the outline of the liver shows a definite bulge. Large tumors of the pancreas may sometimes be demonstrated on a lateral view of the abdomen taken with the patient lying on his back and a considerable amount of gas in the stomach. One should remember that the demonstration of an early small tumor at a time when its removal can be accomplished with the least risk to the patient may tax the skill of the examiner to the utmost, and he should not make a negative report in a suspected case until all modern methods of examination have been exhausted.

MINIMIZE RISK OF INJURIES TO SOLDIERS' SPINES

A means of minimizing the risk of members of the armed forces sustaining injuries to the cartilage between the vertebrae of the lower part of the spine is suggested by J. Grafton Love, M.D., Rochester, Minn., in the current issue of *War Medicine.*

A snugly fitting belt of the so-called sacroiliac variety or a snugly fitting canvas corset to support the backs, particularly of parachute troops, dive bombing pilots, those pilots whose duty necessitates their being catapulted from a ship and landing on an airplane carrier, and tank drivers, might serve to protect the vulnerable lower part of the back and prevent injuries to the intervertebral disk.

The condition of protruded intervertebral disk, with consequent compression of the spinal cord and spinal nerves, is occurring among the armed forces with a frequency sufficient to warrant special consideration. The pain from this condition is usually in the lower part of the back. At the time of injury to the disk, the victim may feel, or in rare cases even hear, a snap in the back. At times the victim even complains of loss of power in the lower extremities at the time of the onset of the protrusion, but more characteristically he has backache, and after a few days to a few weeks the pain extends down one sciatic nerve. The pain is usually accentuated by coughing, sneezing and straining at stool, and in about a fourth of the cases the pain is sufficiently severe at night to interfere with sleep. Treatment of protruded intervertebral disk is removal of the fragmented cartilage which is pressing on the nerve root or spinal cord.

TREATMENT OF CONGENITAL CLUBFOOT IN CHILDREN

JOE B. DAVIS, M.D.
PORTLAND, ORE.

Talipes equinovarus is an exceptionally appropriate name, describing admirably the congenital deformity commonly referred to as clubfoot. Talipes, which is derived from the Latin words pes (foot) and talus (ankle), indicates the portion of the body which is affected. And equinus (toe walking horse) and varus (turning in of the foot) suggest the manner in which the foot is deformed.

Congenital clubfoot is in all probability as old as man himself. Yet Hippocrates, who lived in the fifth century, B. C., is credited with being the first to describe this deformity and to outline measures for correcting it. His writings reveal the surprising fact that the ancient concepts of congenital clubfoot treatment closely parallel those of the present day. To quote from his remarkable works, the correction of a clubfoot is:

> In a word, as if moulding a wax mold, you must bring to their natural position the parts which were abnormally displaced and contracted together, so rectifying them with your hands, and with the bandaging in like manner, as to bring them into their position, not by force, but gently; and the bandages are to be stitched so as to suit the position in which the limb is to be placed, for different modes of the deformity require different positions. And a small shoe made of lead is to be bound on externally to the bandaging, having the same shape as the Chian slippers had. But there is no necessity for it if the parts be properly adjusted with the hands, properly secured with the bandages, and properly disposed of afterward. This, then, is the mode of cure, and it neither requires cutting, burning, nor any other complex means, for such cases yield sooner to treatment than one would believe. However, they are to be fairly mastered only by time, and not until the body has grown up in the natural shape.[1]

Following the corrective procedure proposed by Hippocrates, little, if anything, further seems to have been contributed to clubfoot treatment until the beginning of the nineteenth century. Then attention was once more directed to developing an effective means of managing this ancient deformity, and it was not long before new methods were being practiced. As early as 1816, Delpech of Montpellier[2] performed subcutaneous tenotomy for the cure of clubfoot. Twenty years later, in 1836, Stromeyer[3] corrected the deformed foot of the famous orthopedist Little by section of the Achilles tendon. Little[4] was so impressed with the results of this procedure that he subsequently advocated tenotomy not only for the correction of clubfoot, but also for the management of contracted foot tendons from other causes. During this same period, Dieffenbach[5] treated clubfoot by means of a tendon operation. But his plan of correction was more forceful than that of either Stromeyer or Little. It was not until 1857, however, that bone operations were attempted for the correction of clubfoot. In that year Solly[6] removed the cuboid bone for the treatment of this deformity.

Although many theories have been propounded relative to the etiology of congenital clubfoot, very little has so far been proved. The consensus at present is: (1) clubfoot tends to run in families, being, therefore, to some extent hereditary; (2) it is often associated with other degenerative congenital anomalies; and (3) it is more common in males than in females. DeLucci's[7] explanation for the preponderance of this deformity in the male is of interest. He expressed the belief that there is a lethal factor in the X chromosomes that results in the death of the female, and if this lethal factor could be inhibited, the sex ratio would be more even.

Excellent and detailed descriptions of the various component deformities which characterize classic clubfoot and of the pathologic changes associated with it have been reported by Scarpa,[8] Brockman[9] and others. Briefly, it is believed that these deformities are caused by an abnormal position of the astragalus, the os calcis and the scaphoid. The astragalus, for example, is displaced forward out of the ankle mortice, simulating the position it assumes when the normal foot is in plantar flexion, and its head and neck point medially toward the big toe. The os calcis is displaced medially at the subastragaloid joint, and lies underneath the astragalus. The scaphoid is deviated medially at the head of the astragalus.

Figures 1 and 2 show the typical clubfoot. These roentgenograms are in sharp contrast to those of the normal foot (figs. 3 and 4), in which the os calcis lies on the lateral side of the astragalus and the head and neck of the astragalus are aligned between the first and the second metatarsal bones. It should be emphasized, however, that the individual deformities of congenital clubfoot, commonly referred to as metatarsus varus, congenital equinus

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[1] Hippocrates: The genuine works of, p. 261. Translated from the Greek by Francis Adams, Baltimore. The Williams & Wilkins Co., 1939.

[2] Delpech, Jacques: Cited by Keith, Arthur: Menders of the Maimed, p. 65. Henry Frowde, London, 1919.

[3] Stromeyer, G. F. L.: Cited by Keith, Arthur: Menders of the Maimed, p. 70. Henry Frowde, London, 1919.

[4] Little, W. J.: Cited by Keith, Arthur: Menders of the Maimed, p. 70. Henry Frowde, London, 1919.

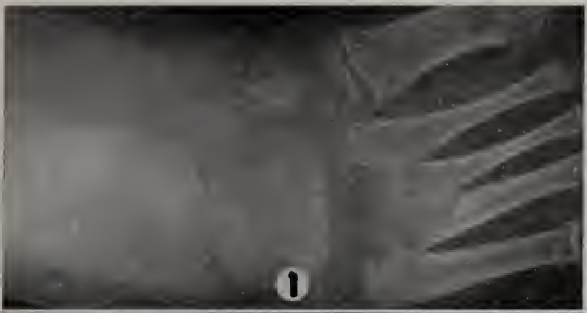
[5] Dieffenbach: Cited by Keith, Arthur: Menders of the Maimed, p. 70. Henry Frowde, London, 1919.

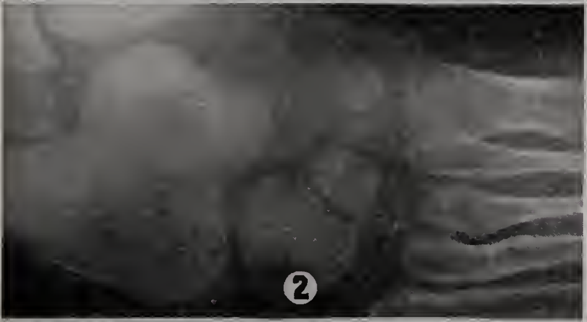
[6] Solly, S.: Cited by Brockman, vide 1 supra.

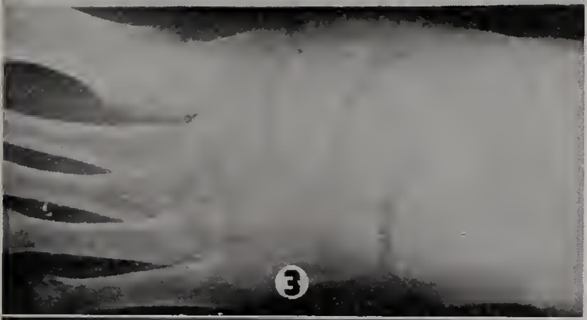
[7] DeLucci, G.: Considerations on Heredity of Congenital Clubfoot, Chir. d. org. di movimento (June) 1938; Abstracted in Orthopedic Research Seminar Notes, Vol. 13, Sec. A, p. 9. Department of Orthopedic Surgery, State University of Iowa, 1939.

[8] Scarpa, A.: Cited by Keith, Arthur: Menders of the Maimed, p. 210. Henry Frowde, London, 1919.

[9] Brockman, E. P.: Congenital Clubfoot (Talipes Equinovarus), p. 44. William Wood & Company, New York, 1930.







Figs. 1 and 2. Congenital clubfoot, with its clinical deformities of equinus, varus and cavus.
Figs. 3 and 4. Normal foot.

and congenital cavus, may, from the standpoint of treatment at least, be considered merely as varying degrees of the same condition.

For best results, treatment of congenital clubfoot should be started as soon after birth as the child has become accustomed to his environment and has begun to gain weight. Ordinarily, this is some time during the second week of life. For all essential purposes, treatment consists of completely reversing the deformity and maintaining the new position. It is, of course, necessary to keep the foot in the changed position until the muscles have been trained to function normally and there is no danger of recurrence of the deformity. Every care must be taken not to injure the soft tissues of the foot, for such injury results in formation of scar tissue which in turn produces rigidity. Gentleness is, thus, of paramount importance in the management of clubfoot. In ancient times Hippocrates stressed its value. More recently, Kite,[10, 11, 12] Sell[13] and others have produced indisputable evidence that the more gently the deformity is corrected, the more supple will the foot become and the better will its function be maintained after correction.

When treatment is undertaken, the adduction of the forefoot and the cavus deformity are corrected first. Then any residual varus of the heel is overcome. Finally, attention is directed to management of the equinus deformity, but not until roentgenograms show that only the equinus remains. Correction of the equinus is left until the other component deformities have ben overcome, because the foot will form a rocker bottom at the midtarsal area when it is brought up unless the scaphoid is well in front of the astragalus.

Correction of the various component deformities of early clubfoot is accomplished by repeatedly modified casts which may or may not be wedged. Wedges in clubfoot casts facilitate changes in posiposition of the foot. They should, however, be so placed that, when they are removed and the cast is realigned, corrective force will be applied to the clubfoot deformity (figs. 5 and 6). Each cast should be adequately padded and smoothly applied. The toes should be held flat while the cast is setting so as to stretch the flexor pollicis longus tendon and the common flexor tendons of the toes. When all the deformities have been overcome, a cast should be applied that will hold the foot in an overcorrected position. This position should be maintained for about three months. At the end of that time no other treatment is ordinarily required. In stubborn cases, however, the foot must be kept in a clubfoot brace (fig. 7) or in a clubfoot shoe until it no longer shows a tendency to revert to its original deformity.

Unfortunately, not all patients with congenital clubfoot are treated during infancy. Children who have such deformities are often from three to five years old before they are brought to a doctor for

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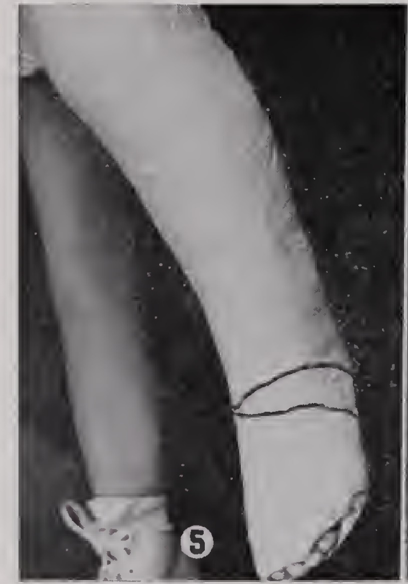
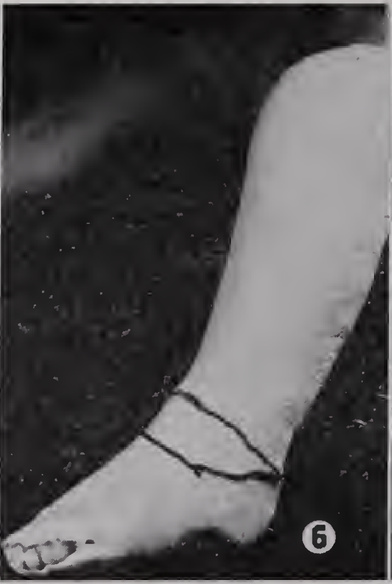
[10] Kite, J. H.: Nonoperative Treatment of Congenital Clubfeet; Review of One Hundred Cases. South. M. J., 23:337-345, April, 1930.

[11] Kite, J. H.: Treatment of Congenital Clubfeet; Study of Results in Two Hundred Cases. J. A. M. A., 99:1156-1162, Oct. 1, 1932.

[12] Kite, J. H.: Some Comments on Treatment of Congenital Clubfeet. J. M. A. Georgia, 29:212-216, April, 1940.

[13] Sell, L. S.: Conservative Treatment of Congenital Clubfeet in Infants. South. M. J., 32:1199-1202, Dec., 1939.





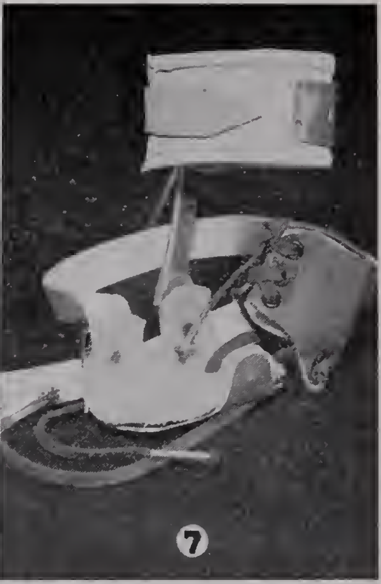


Fig. 5. Clubfoot cast showing outline of wedge for correction of forefoot adduction and cavus deformities.

Fig. 6. Outline of wedge for correction of equinus deformity.

Fig. 7. Clubfoot brace for maintaining corrected position.

treatment. Hence, they are already walking when the doctor first sees them. In a few instances, management of this type of late clubfoot is essentially the same as that of the early condition, corrective moulding by means of modified plaster casts. In some, however, these corrective measures are not sufficient, and it is necessary to resort to surgical division of the contracted ligaments and tendons. Among the excellent procedures advocated for the correction of contracted soft tissues in late clubfoot is the one practiced by Ober.[14] His operative plan is as follows:

> A fish-hook incision, three inches in length, is made about the internal malleolus. The incision begins one and one-half inches above the malleolus, half way between the posterior border of the tibia and the Achilles tendon, a tourniquet having been previously applied. It is carried about one-half inch below the malleolus and swung anteriorly and a little upward over the depression which represents the situation of the subluxated scaphoid. It is carried through skin, fat and subcutaneous fascia, and the anterior flap is dissected well forward so that, in sewing up, no undue strain is brought to bear on the skin edges of the wound. This incision exposes the deep fascia over malleolus, the annular and deltoid ligaments.
>
> A semilunar incision is now made, curved upward, three-quarters inch above the tip of the internal malleolus through all the structures to the bone, avoiding the posterior tibial tendon. This flap is dissected off the bone in a downward direction, and includes both layers of the deltoid ligament, giving an excellent ligamentous flap and a wide exposure of the tibiotarsal articulation. The superior calcaneoscaphoid ligament is divided transversely by simply continuing the curved incision toward the plantar surface of the foot. By means of a tenotome the portions of the deltoid and inferior calcaneoscaphoid ligaments, which are respectively attached to the posterior and anterior borders of the sustenaculum tali, are incised longitudinally to the bone. With a blunt dissector or an osteotome, these ligaments with periosteum are actually boned off of the inferior surface of the sustentaculum tali and well down on the internal surface of the os calcis.
>
> It is not often necessary to cut the posterior tibial tendon, and it is not necessary to cut the Achilles tendon except in older children. The plantar fascia may be divided, if there is considerable cavus. The foot is now grasped, both by the forefoot and the heel, and is manipulated into an overcorrected position. The *os calcis everts easily*. The head of the astragalus and scaphoid rotate into normal position. Satisfactory overcorrection is obtained.

Postoperative treatment consists of plaster cast immobilization in the overcorrected position until there is no doubt that the foot will maintain its new position. As a rule, overcorrection must be maintained for about three months.

Still another problem in the management of congenital clubfoot is presented by older children from nine to twelve years of age, the bones of whose feet are almost completely developed. In these children the clubfoot deformities become rigid and there are, in addition, deformation changes of the individual bones of the foot. Consequently, treatment must include correction of the bony abnormalities.

For the correction of this type of late clubfoot, Hoke[15] and many others have advanced operative measures, all of which are praiseworthy in some respects. But the simplest and most satisfactory procedure is removal of bony wedges from different planes of the foot, followed by immobilization in a plaster cast until the osteotomy sites are united. Ordinarily it takes about three months for satisfactory union. Attention should, however, be drawn to the fact that such operative management must not be undertaken at too early an age. Too early correction of this type is likely to result in unnecessary shortening of the foot, insufficient bone for good union and recurrence of the deformity. While the age limit for operative correction will naturally vary more or less with different patients, it is a fairly safe rule not to attempt interference of this kind until the child is at least eleven years old. It must be borne in mind that osteotomy sites will not unite without adequate bone.

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[14] Ober, F. R.: Operation for Congenital Equinovarus Deformity, Preliminary Report. J. A. M. A., 65:621, Aug. 15, 1915.

[15] Hoke, M.: Operation for Stabilizing Paralytic Feet. J. Orthop. Surg., 19:494, Oct., 1921.

In a group of fifteen children with early congenital clubfoot, treated by my associates and myself by means of repeatedly modified, wedged plaster casts, there was one failure. This was attributed to the fact that the patient was not seen often enough and the foot was not kept in corrective plaster casts for a sufficiently long period. This brings up an extremely important point in the management of clubfoot. Good results cannot be obtained unless the patient is seen at frequent intervals and the progress of the treatment is closely supervised. Treatment must constantly be altered to fit the progress made by each individual, and this certainly cannot be done, if the patient is not seen frequently by his doctor.

SUMMARY

1. Good results in treatment of congenital clubfoot can be expected if treatment is carried out early in the life of the child.
2. The more gently the clubfoot is corrected, the better will be the end-results.
3. Close supervision of the patient's progress is as important as the treatment itself.

Stevens Building.

THROMBOEMBOLIC PHENOMENA

PRACTICAL CONSIDERATIONS OF THERAPY*

MURRAY L. JOHNSON, M.D.
BALTIMORE, MARYLAND

Thrombophlebitis, phlebothrombosis, pulmonary and peripheral emboli are the conditions to be discussed in this paper. To obtain data, hospitals and clinics throughout the country were attended, and in most cases discussions were had with the men who have been foremost in the field. Frequently each organization was found to be enthusiastic about one or the other form of therapy and it was found that, although other modes were recognized, they had not been given a fair trial. An attempt is made in this paper to evaluate each treatment properly and to give practical information that may be used directly on a case as it presents itself.

THROMBOPHLEBITIS AND PHLEBOTHROMBOSIS

Thrombophlebitis is the term applied by Ochsner to intravascular inflammation with temperature rise, leukocytosis and tenderness, producing an adherent clot, while phlebothrombosis is to be applied to intravascular clotting with a less adherent clot and perhaps no temperature or leukocyte increase and no tenderness. Most authorities have adopted this differentiation as a working concept, admitting however, that all gradations between the two exist. The importance of this as a fundamental concept is both from prognostic and therapeutic viewpoints.

Diagnosis of thrombophlebitis is made by local signs of tenderness over the vein, rise of temperature and probable leukocytosis. In superficial veins there may be signs of local inflammation; the extremity as a whole is cooler than the opposite side, due to reflex vasospasm, and may have a slightly cyanotic pallor. Edema is usually present, due to impairment of circulation and improper exchange of intravascular and perivascular fluids, more than to obstruction of venous return. Thus we find a rationale for novocain sympathetic injection, first described by Leriche and Kunlin[1] in 1934 and popularized in this country by Ochsner and De Bakey.[2] There now has been sufficient trial in many medical centers, with universally favorable results, to accept this as a part of our armament for treatment of this condition. Heparinization of this inflammatory type of lesion has fewer supporters and there is less to offer, unless the thrombotic element is predominant. We do know that the fever and edema will subside more rapidly under heparin than under no specific treatment, as Murray[3] has expounded.

Ligation is to be considered if an intravascular infection with the possibility of septic emboli is present. Heat to the extremity, in preference to the time-honored ice, is also of aid in overcoming the reflex vasospasn. Compression bandages from the toes to the inguinal regions are of definite value in aiding the circulation of the extremity and thereby shortening the convalescence. Heat to and elevation of the extremities are of value. Roentgen therapy in small doses (95 to 100 roentgens with a heavy filter) has been advocated; mecholyl iontophoresis likewise has its supporters. Neither of these methods is universally accepted, though reports are favorable.

Phlebothrombosis as a diagnosis is difficult, and it is to be remembered in using this term that many cases of "thrombophlebitis" are to be referred to this condition, also gradations into the inflammatory lesions are gradual. There is relatively little pain, little or no elevation of temperature and leukocytes and little or no swelling. Of signficance is the increasing pulse rate and frequently the presence of Homan's sign or pain in the calf of the leg and popliteal space on forced dorsiflexion of the foot. Thromboses are more likely to form in the veins of the foot and lower leg than in the thigh veins.

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*From Surgical Service, Union Memorial Hospital.

[1] Leriche, R. and Kunlin, J.: Cited by Ochsner and DeBakey infra.

[2] Ochsner, A., and DeBakey, M.: Therapeutic Considerations of Thrombophlebitis and Phlebothrombosis. New England J. Med. 225:207-227, Aug. 7, 1941.

[3] Murray, G.: Heparin in Thrombosis and Blood Vessel Surgery. Surg., Gynec. & Obst. 72:340-344, Feb 15, 1941.

In this type of lesion, prophylaxis is of prime importance and there are several etiologic factors to be taken into consideration. Anemia as well as polycythemia predispose to thrombosis. Of the operating technic, large amounts of tissue damage, sepsis and extravasation of blood will all be followed by a breakdown to polypeptides which definitely gives an increased danger of intravascular clotting. Postoperatively, proper hydration is necessary, to prevent concentration of the coagulating elements. Early motion, best as planned forcible exercises of the lower extremities, sufficiently deep respirations, prevention of abdominal distension and care not to strap the abdomen too tightly, are all factors worth considering seriously in attempting to overcome the problem of phlebothrombosis.

Once the diagnosis is established, which possibly may be following a pulmonary infarct, heparinization, as outlined by Murray and independently by deTakats and others, has been proven to be a most effective mode of treatment. Division of the femoral or iliac vein is a more heroic treatment and certainly will prevent further propagation of a thrombotic process. The practice as advocated by Welch and Faxon[4] is, following an embolus, to ligate the femoral vein of the leg that exhibits evidence of phlebitis, then to do a venogram on the opposite side to preclude this as a source, ligation being performed if necessary. Series of this procedure are yet too small and the question of postoperative edema too important to accept this method as that of choice. Where heparin is not available, ligation certainly is a life-saving procedure, and is not to be dismissed from mind. As far as sympathetic injection is concerned, there is no logical reason to do so unless a circulatory spasm is present as indicated by pain or edema. Results from thrombectomy with resuturing have been discouraging, but adequate series of heparinization in conjunction with this procedure have not been carried out in the clinics visited.

PULMONARY EMBOLISM

This is the acute impaction of a thrombus in one of the bifurcations of the pulmonary arteries and is sadly enough a common cause of death or severe morbidity in the postoperative period. If the patient survives the initial impact, infarcation of the lung distal to the site of embolism occurs.

Diagnosis is not always easy. This, however, is very important as recent advances in therapy make early recognition adamant. As a rule, the period of embolism occurs after the patient has recovered from the operation itself. Classically, it strikes as the patient gets out of bed for the first time and there is a sudden collapse; the patient is pulseless, cyanotic, dyspneic and may or may not be too severely shocked to complain of chest pain. This pain may be entirely lacking, it may be a one-sided or substernal visceral ache, or it may be a definite pleuritic pain. Small emboli may pass unnoticed unless the hospital staff and attending physicians are observant, and here is a most important point, as most fatal pulmonary emboli are preceded by smaller ones. When a small embolus strikes, the only symptoms may be an elevated pulse rate and a little shortness of breath. Pleurisy with the development of a friction rub is an early sign at times. Physical signs of consolidation later, and roentgen evidence of a wedged-shaped opacity are to be found. Blood stained sputum and cough are later symptoms, usually several days after the embolism. Pneumonia originating in the infarcated area, at times developing into lung abscess, complicates the picture and often the underlying embolus is not considered. Thus we see that the diagnosis can easily be confused with, among other conditions, coronary thrombosis, atelectasis, pneumonia, internal concealed hemorrhage and acute pulmonary edema.

Pathologically, the large fatal emboli show little but edema of an entire lung or lobe distal to the thrombus. The appearance of infarcts varies with its age, from hemorrhagic consolidation to healed fibrotic area, associated with pleurisy. The typical wedge shape, extending to the broad base at the pleural extremity, is due to the anatomic arrangement of the circulation; a septic infarct may resolve into an abscess. The underlying pathology is a thrombus site somewhere in the venous system or right heart.

Treatment begins with prophylaxis as mentioned under the discussion of phlebothrombosis. This is by all means the most important; then comes the ability to recognize minimal infarcts and the presence of dangerous thromboses. For the acute massive embolus, papaverine grains .5 and atropine grains .01 intravenously are of definite value in overcoming the arterial spasm at the site of lodgement. Giving stimulants such as caffein, coramine and adrenalin is demanded, as is oxygen therapy, when the patient is severely shocked.

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[4] Welch, C. S., and Faxon, H. H.: Thrombophlebitis and Pulmonary Embolism. J. A. M. A. 117:1502-1508, Nov. 1, 1941.

Heparin should be administered as soon as possible and run as a continuous intravenous drip. Satisfactory proof is on hand as to the efficacy of heparin, enough to make this the method of choice. Persons advocating ligation stress the point that we cannot dissolve prexisting thrombi with heparin, but this does not negate the fact that it is clinically effective and, looking at the progression of an embolus, a logical explanation can be evolved. The embolus is an extension into the flowing stream from a more adherent clot which breaks off and is carried along, no doubt with a certain amount of trauma and resultant enlargement of mass to be impacted in a bifurcation of the pulmonary artery. Again, this is trauma and results in a false barrier that must add to the obstructive mass of the thrombus.

An additional prophylactic treatment, the use of which is debatable, is giving one of the sulfa drugs to prevent infection in a consolidated lung resulting from infarction.

Regarding the Trendelenberg operation of pulmonary embolectomy, few surgeons regard this as any more than an interesting surgical curiosity. It has been known to save lives in a few instances, but as the technic is difficult, the time limit so short, its application is limited.

PERIPHERAL EMBOLISM

By being acute in our diagnostic acumen we have in this condition a surgical emergency that can be treated with intelligence to give good results. Without adequate intervention, gangrene of the extremity will result, depending upon the site of lodgement of the embolus. Diagnosis is made easier, if the doctor has a preconceived notion of the symptoms;' treatment is more confidently undertaken, if he realizes the seriousness of the condition.

The origin and time of breaking off the embolus is usually without symptoms, though it is reported that occassionally a sensation of precordial distress and weakness precedes the peripheral symptoms. Barring the rare paradoxical embolus of a patent foramen ovali, the site of origin is an intracardiac thrombus, most often occurring during an acute exacerbation of a mitral heart disease, with or without auricular fibrillation. Coronary thrombosis is rarely a cause for peripheral embolus. Thorough search for the site of origin at times may be unsuccessful.

Pain is usually the first symptom but is not necessarily present, there being all ranges from a mere change of sensation and numbness to an acute localized pain. Vasospasm is a prime factor here, following lodgement of an obstruction and it can be seen, as Murray[5] has pointed out, that the larger, more serious obstructions are in arteries containing a smaller amount of muscle and thus an embolus in the common iliacs of bifurcation of the aorta produces no severe pain. Another factor of pain production is the anoxia of tissues. Other symptoms complained of are tingling, coldness, paralysis and stiffness. In addition, we find objectively absence of pulsations, and correlating this with a knowledge of anatomy is most important for localization. Color changes are uniformly seen when complete block is present, consisting of pallor and mottling, with a cyanotic hue predominating, and here, again, the level of this change is important in localizing the site of obstruction.

If the embolus is complete, there may be no extension of the thrombus peripherally; if incomplete, there is an extension distally from the bifurcation, thus enlarging the size of the initial thrombus greatly. There is little, if any, proximal extension. These points are of importance in the surgical treatment.

Once the diagnosis is established, localization should be made as accurately as possible with knowledge of the anatomy of the blood vessels at hand. Satistically, various clinics agree that in the lower extremity the bifurcation of the femoral artery is the common site, other sites of predilection being the bifurcation of the aorta, common iliac, popliteal and tibial arteries. In the upper extremity these accidents are more rare, occurring in the brachial, axillary and radial arteries, and the danger of following gangrene is definitely less.

Recent advances in vascular surgery, especially in combination with heparin, have shown that embolectomy is an entirely feasible procedure. However, some institutions believe that in most cases the extremity may be saved by releasing the vasospasm induced by the lodgement of the embolus, and on this basis immediate novocain injection on the affected side is done. It is logical to assume that an operation done under local anesthesia, as are most of the peripheral embolectomies in an heparinized patient, in combination with one or several novocain sympathetic injections, offers most to the patient. Other methods reported, as massage to break up the clots and Pavex therapy to establish collateral circulation, do not have many supporters and certainly are not the primary treatment to be relied upon.

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[5] Murray, D. W. G.: Embolism in Peripheral Arteries. Canad. M. A. J. 35:61-66, July, 1936.

TECHNICS FOR PROCEDURES MENTIONED

Injection of lumbar paravertebral sympathetics. The usual procedure as advocated by Ochsner and DeBakey[6] is to inject each of the first four lumbar vertebrae. Long spinal needles are of sufficient length in most cases and are inserted vertically about two and a half finger breadths lateral to the dorsal spine, infiltrating progressively with novocain, until the lateral process of the vertebra is reached. This depth is about three centimeters in thin individuals and varies with the depth of the subcutaneous layer. Beyond this the needle direction is changed a little toward the midline, either above or below the lateral process, and inserted an additional two and a half finger breadths, this reaching near the anterolateral surface of the body of the vertebra, where the sympathetic chain and ganglia lie. The body of the vertebra may be felt with the needle. As this distance from the lateral process to the sympathetic chain is rather constant, it is well to have inserted on the needle a small piece of rubber band that may be measured exactly to aid in regulating the depth of insertion.

Five cubic centimeters of one per cent novocain is inserted in each of these four needles, being sure they are not in the blood vessels. Trimble of Baltimore uses only two needles, usually in the second and third lumbar vertebra levels and injects twenty cubic centimeters of one-half per cent novocain, containing five drops of adrenalin hydrochloride solution 1:1000 to the ounce. This has been found to give a more constant and prolonged effect. A proper injection will be followed by definite increase of skin temperature and flushing of the subcutaneous capillaries seen best on the toes, with a subjective feeling of warmth. In treating acute thrombophlebitis, injections should be repeated every day until the temperature returns to normal; usually two or three blocks are sufficient. In chronic cases, every other day injections for three blocks usually bring improvement. Regarding alcohol injections for a prolonged block, the peripheral neuritis resulting occurs too often to use this promiscuously.

Injection of cervicodorsal paravertebral sympathetics.[7] In treating spasm resulting from emboli of the upper extremity, paravertebral sympathetic block is a necessary adjunct for the best results. The needles are inserted at points four centimeters away from and on levels with the last cervical and first dorsal spinous processes. The first two ribs are impinged upon and, changing the direction about twenty-five degrees toward the midline under each rib, the needles are inserted three centimeters into the space between the bodies of the vertebrae and the pleura. Twenty cc. of .5 per cent or 10 cc. of 1 per cent novocain are injected into each needle. Adrenalin hydrochloride solution 1:1000, two or three drops, may be added to the solution injected into each needle to give a prolonged effect. A temporary Horner's syndrome is usually present with a proper sympathetic block, accompanying the signs of flushing, warmth and dryness of the extremity.

VENOGRAMS

The following is Welch's[8] technic, after Bauer. The end of the short saphenous vein is isolated just behind the lateral malleolus. Into it are injected 20 cc. of diodrast in such a fashion that the entire injection takes exactly sixty seconds. At the end of sixty seconds the picture is taken. It is necessary to have the roentgen tube at a good height above the patient in order that the two casettes, one of which is under his lower leg and the other under his thigh, will both be included within the scope of the rays. The injection is performed with the patient flat on his back and with a small support under his heel.

Lateral plates may also be obtained in the same fashion. Cutting down on the vein under local anesthesia may be necessary. Familiarity with normal venograms is of aid in deciding the presence of thrombosis.

LIGATION OF FEMORAL VEINS AND TRIBUTARIES

Local anesthesia is used to expose the femoral triangle. If saphenous ligation is desired, this may be done at any point before its entrance into the common femoral. The site of ligation of the femoral vein is just distal to entrance of the deep femoral, these joining to make the common femoral vein. Ligation of the common femoral may be done, but is much more likely to produce postoperative swelling of the leg. Traction sutures beneath the veins are of great aid. Simple ligation has no advantage over division and ligation, and it is well to open the vein to make sure no thrombus is above. Suction for removal of the clot may be used proximally, if the ligation cannot be carried high enough. Patients should be gotten up soon; tendency to swell should be guarded against by compression bandages.

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[6] Ochsner, A., and DeBakey, M.: Treatment of Thrombophlebitis by Novocain Block of Sympathetics; Technic of Injection. Surgery 5:491-497, April, 1939.

[7] White, J. C.: Diagnostic Blocking of Sympathetic Nerves to Extremities with Procaine. J. A. M. A. 94:1382-1388, May 3, 1930.

[8] Welch, C. E.: Personal Communication, Dec. 10, 1941.

HEPARINIZATION

The accepted method at present is giving the heparin in a continuous intravenous drip of 5 per cent glucose, normal saline or Ringer's solution. The most convenient veins are those of the forearm or hands and a properly fixed needle allows the patient all the freedom of motion he desires without discomfort. The amount of fluid given in a twenty-four-hour period can be as small as one desires but may be more easily regulated at approximately 2000 cc. per twenty-four hours, changing the dilutions as necessary. The initial concentration of the infusion solution may be put at 300 milligrams of heparin per 1000 cc. on the basis of 2000 cc. per day.

Persons vary in their response to heparin and frequent checks of coagulating time are necessary, probably every four hours for thirty-six or forty-eight hours; then twice a day for the duration of heparinization is the best routine to follow. The coagulation time is sustained at the elevated level of fifteen to twenty minutes and this has been proven clinically to be sufficient to give the desired results. Use of intermittent doses has not had sufficient clinical trial to advocate it generally, but several investigators are using from four to six injections in a twenty-four-hour period.

Length of the period of heparinization varies. In pulmonary embolus probably a week to ten days is sufficient, the important point being mobilization of the patient on the fourth or fifth day, this being easily done, if the intravenous needle is well fixed and the tubing long enough. Thus the patient will be up, walking, if possible, when the heparin is discontinued. In cases of embolectomy, where operative interference has disturbed the intima of the artery, a full ten days or two week period is necessary to allow physiologic resumption of blood flow through the involved segment.

Deleterious reactions such as happened in the early days of heparin, when an impure product was given, often with coagulation time put up to over ninety minutes, do not occur. Likewise, in many patients who have had repeated injections, no evidence of anaphylaxis has appeared.

The use of 3, 3′ methylenebis (4-hydroxycoumarin)[9] as a cheaper oral or intravenous substitute for heparin is yet in the experimental stage, but shows promise of being a useful agent. Its action is primarily shown on the prothrombin time, raising this as well as the coagulation time. Toxicity, shown as hemorrhagic tendencies, cannot be counteracted by vitamin K however, and transfusions are necessary.

EMBOLECTOMY OF PERIPHERAL ARTERIES[10]

Surgical intervention after forty-eight hours is useless and results poor after ten hours, if the embolus has produced a complete blockage of the artery. Local anesthesia is usually sufficient; spinal or general anesthetic may be used. Soft rubber clamps are used to shut the artery distal and proximal to the thrombus within. A short longitudinal incision is made over the proximal end of the thrombus and the clot is expressed by gentle pressure. The distal clamp is then released to enable back bleeding to flush the remnants of the clot, and the same is done with the proximal clamp. The incision is closed with arterial silk (000,000 oiled suture), using continuous stitch. Irrigation of the segments with either 2 per cent sodium citrate or normal salt solution is at times of aid.

Novocain block to release arterial spasm and heparinization to prevent further clotting at the site of operation are invaluable and should be instituted to give the patient every possible chance for recovery. Topical application of heparin in the segment should be used, if the patient is not sufficiently heparinized at the time of operation.

An inguinal incision may be used for emboli in the aorta or in the iliac arteries, and by massage or dislodgement with an introduced instrument they may be brought out through an incision in the femoral artery.

CONCLUSIONS

1. Acute thrombophlebitis of the lower extremity is best treated by early paravertebral sympathetic injection. Chronic thrombophlebitis can be improved by injection therapy.

2. Phlebothrombosis when recognized should be treated by heparinization. Ligation of the femoral vein in conjunction with venograms may be used, if heparinization is not available. Prophylaxis by proper operative technic and postoperative care is most important here.

3. Pulmonary emboli should be treated by immediate intravenous heparinization. Papaverin and atropine are indicated as emergency measures. Femoral ligation is demanded, if heparin is not available, in order to give the patient the best chance of recovery.

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[9] Bingham, J. B., Meyer, O. O., Pohle, F. J.: Studies on Hemorrhagic Agent 3, 3^1 Methylenebis (4-hydroxycoumarin) Am. J. M. Sc. 202:563-578, Oct., 1941.

[10] DeTakats, G.: Vascular Accidents of Extremities: J. A. M. A. 110:1075-1081, April 2, 1938.

4. Peripheral emboli are being diagnosed early with increased frequency. Treatment consists of embolectomy as an emergency procedure in conjunction with heparinization. Paravertebral sympathetic injection with novocain injection should be done in conjunction with all embolectomies.

All procedures recommended in the conclusion have been clinically tried and are not offered as new material. A plea is made for intelligent handling of the conditions discussed, with realization that we have new and potent treatments at hand.

EPIDEMIC KERATOCONJUNCTIVITIS*

SUPERFICIAL PUNCTATE KERATITIS

Andrew F. de Roetth, M.D.
SPOKANE, WASH.

An eye disease seems to have set foot in our country, and we may assume that it is reaching epidemic proportions, though single cases have possibly been observed previously. Due to the discomfort and possible involvement of the cornea, it may cause total disability for one to three weeks and in severe cases, even permanent partial disability.

I saw first three cases early in December, 1941, and since then nine more until the middle of February, 1942.

SYMPTOMATOLOGY

The initial subjective symptoms were foreign body sensation, or feeling of fullness and lacrimation. Three patients had a slight malaise in the first two to three days of the disease. At its height there was neuralgic pain over the eye and in case of keratitis there was a sandy feeling.

After the eye got red the clinical picture developed in four to five days to its fullness. The lids were swollen, the lower perhaps stronger, and the edema extended to the cheek. The lid conjunctiva was red, and there was some papillary unevenness in and near the fornices which showed many small follicles, but not in all cases. The conjunctiva was more edematous than infiltrated, so that its red color was of a lighter hue than it is in trachoma. The semilunar fold was swollen. In half of the cases there was chemosis, most marked near the lower fornix. In four cases several small subconjunctival petechiae of the bulbar conjunctiva appeared on the fourth to sixth day. The discharge was slight and of a mucoserous character. In one case a fibrinous membrane covered the conjunctiva of the lower lid. In eight cases there was marked swelling of the preauricular gland which was slightly tender to the touch.

About eight to twelve days after onset of the disease, when the conjunctivitis was definitely subsiding and there was practically no more lid edema, eight patients developed superficial punctate keratitis. There were three to thirty or more tiny (⅓-⅔ mm. in diameter), slightly elevated infiltrates, mostly grouped in the pupillary area. Under slit lamp they appeared to be made up of several tiny gray dots, the tissue between the dots being opaque. They were located in the epithelium and immediately under it, perhaps even under the Bowman's membrane. There was no corneal vascularization. Though the keratitis caused a slight scratchy feeling, the patients rather complained of blurred vision, this being 20/25 to 20/66.

The keratitis remained unchanged for several weeks, when the infiltrations started to clear up and in a month after the keratitis started the cornea became normal except in three cases. In one of these, four months after the beginning of the disease, the cornea of one eye still was densely dotted; the dots were even, partly confluent and the vision was 20/40.

The disease started in all cases in one eye only, but in five cases the other eye became involved in four to seven days, though the conjunctivitis was less marked. In the bilateral cases the keratitis involved both eyes in two, the first diseased eye in two cases and only the second eye in one.

The age of the patients varied from twenty-four to sixty-five years. The ratio of sex was nine for women to three for the men.

ETIOLOGY

At first three diseases were thought of: acute catarrhal conjunctivitis, inclusion blennorrhea and Parinaud's oculoglandular syndrome. The smears and cultures in the first six cases resulted in xerosis and staphylococcus; diplobacillus, Morax-Axenfeld and staphylococcus aureus; staphylococcus albus and pneumobacillus; xerosis; staphylococcus aureus and diphtheroid bacillus; staphylococcus albus and diphtheroid bacillus. None of these bacilli cause acute catarrhal conjunctivitis, in which the preauricular gland is involved, and which is complicated by superficial punctate keratitis. Seven cases were examined for inclusion, the conjunctival material gained by abrasions being stained by the Giemsa method. No inclusion bodies or free initial bodies were found.

Parinaud's oculoglandular syndrome was taken into consideration because of involvement of one eye only, and of the preauricular gland. This syndrome is not an etiologic entity, for it can be caused by tularense bacterium, bacterium pseudotuberculosis rodentium and by sporothrix and leptothrix. However, the smears and cultures of the first six cases failed to show any fungi or bacteria other than mentioned above. The probability of ocular tularemia was considered, for it is known that in this part of the country rodents are infected with bacterium tularense. The serologic test, however, done in the third week of one case, was negative. Furthermore, in the second week of the disease, the first three cases developed a superficial punctate keratitis which does not fit in the picture of Parinaud's conjunctivitis. Thus, the bacteriologic and serologic findings did not disclose the nature of the disease.

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After these considerations there was no doubt that this disease was identical with that observed lately in Oahu, Hawaii, in 1941, in Germany in 1938-40, in Selangor, Federated Malay States, in 1935-38, in London in 1933, and very probably with that of Madras, India, in 1928-29. According to private information from Drs. F. Cordes and M. J. Hogan, there were many cases in San Francisco in December, 1941, and January, 1942. The Madras, Selangor and London epidemics were described as superficial punctate keratitis. This term was first used by Fuchs[1] in 1889, and the same condition under various names was reported by Adler,[2] Reuss[3] (1889) and Koeppe[4] (1917). However, it cannot be stated that all these morphologic entities were etiologic ones as well. The disease was often associated with an acute infection of the upper respiratory passages.

Holmes[5] reported an "epidemic infectious conjunctivitis" from Oahu, the first cases of which were seen in June, 1941, and new cases still were coming in November.

In Germany the disease started in the southwestern provinces in March, 1938, and it spread to the northeast. Bartels[6] thinks there were 3,000 cases in Dortmund; Zur Nedden[7] saw 500 in Düsseldorf; Meeseman,[8] 250 at the University Eye Clinic of Kiel in six months; Senger,[9] 400 in Munich in four months.

Viswalingam[10] observed 3,521 cases in Selangor from 1935 to 1938. Noteworthy among the special features was that "cold weather and bath in pools appeared to bring about the onset."

Wright[11] (Madras, India) saw about 3,500 cases of superficial punctate keratitis in the Government Ophthalmic Hospital from May, 1928, to February, 1930. However, 14-100 cases yearly were recorded in the previous six years. The disease started with mild conjunctival hyperemia in the majority of cases, and only rarely with acute conjunctivitis. On the first to sixth day, the punctate keratitis appeared, in the form of gray dots in the superficial layers of the cornea. The forerunner of this epidemic in India was observed in 1901 by Herbert[12] and 1920 by Kirkpatrick.[13]

During the winter, 1930-31, cases of superficial punctate keratitis appeared frequently at different hospitals in London, according to Doggart.[14] These cases were diagnosed often as ordinary conjunctivitis before the emergence of corneal dots. The disease and its course was the same as our present epidemic.

The incubation period is set between 2-5 days by Holmes, 4-5 days by Bartels, 8 days by Fleischer,[15] Meesmann and Bachmann, 10-20 days by Grüter,[16] 7-34 days and 3-9 days in experimental cases by Wright.

The majority of the modern authors agree that it is caused by an unknown virus. Wright found inclusion bodies of different size in the epithelial cells of the cornea, both nuclear and cytoplasmatic, suggestive morphologically of Negri bodies or the inclusions in variola. Some stained blue, others red with hematoxylin and eosin. Meesmann and Bachmann saw extra- and intracellular elementary corpuscles in the conjunctival smear under the fluorescent microscope. However, they found the same corpuscles in other common pyogenic infections.

Dresel,[17] using the inoculation method on the chorionallantois of the egg, found changes suggestive of a virus infection in five out of twelve cases.

There is an interesting point in the pathogenesis of the disease, the part of trauma suffered by the eye several days before the onset. A great number of patients of Meesmann and Bachmann had cor-

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3. Reuss: Keratitis maculosa. Wiener klin. Wschnschr. 2:665, 1889.
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11. Wright, R. E.: Superficial Punctate Keratitis. Brit. J. Ophth. 14:595-601, Nov., 1930.
12. Herbert A.: vide 4 supra.
13. Kirkpatrick, H.: vide 4 supra.
14. Doggart, I. H.: Superficial Punctate Keratitis. Brit. J. Ophth. 17:65-82, Feb., 1933.
15. Fleischer, B.: vide 6 supra.
16. Grüter, W.: vide 6 supra.
17. Dressel: vide 6 supra.

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neal foreign bodies just prior to the disease. In six of my cases, there was some kind of trauma of the cornea or conjunctiva eight to eleven days before onset of the conjunctivitis.

Animal experiments failed to clear up the etiology of the disease, though Wright produced the typical disease of the cornea by inoculating the human cornea and that of black rabbits with scraping material taken from the diseased cornea. Jancke[18] could produce, in several cases, even the typical picture of superficial punctate keratitis in rabbits.

TREATMENT

The disease has no specific therapy and so far local treatment failed to show results. Holmes used sulfathiazole and sulfanilamide "by mouth and local instillation into the conjunctival sac without apparent effect, except that subjective improvement was reported by two patients from oral administration of sulfanilamide." Scheerer[19] states the roentgen treatment of the eye, 100 r, has prophylactic value against the keratitis, when used in the first days of the conjunctivitis.

I have been administering sulfadiazine 30 gr. a day for four to seven days, and in three cases repeated it with the appearance of keratitis. I based this therapy on the specific action of the sulfon drugs experienced in treatment of trachoma and inclusion conjunctivitis. Trachoma was the first virus disease in which sulfanilamide acted as a specificum. Having to deal with another, supposedly virus disease of the conjunctiva and cornea, I ordered sulfadiazine for these patients. There was in all cases a definite change, rapid subsiding of the conjunctival symptoms in two to four days. But the outbreak of punctate keratitis was not impeded in any way by this therapy.

SUMMARY

Twelve cases of keratoconjunctivitis were observed within ten weeks in December, 1941, and January-February, 1942. The main clinical features were swelling of the eyelids, acute conjunctivitis with chemosis, followed in most of the cases by superficial punctate keratitis in about eight days. Swelling of the preauricular gland was a frequent occurrence.

The etiology is unknown, but is believed to be a specific virus. Trauma to the eye is a predisposing factor. There is no specific therapy, but sulfadiazine, though having not prevented keratitis, eases rapidly the symptoms of the conjunctivitis.

The same disease was described several times, as early as 1889. Latest epidemics were observed in Oahu (Hawaii) in 1941, Germany, 1938-40, Selangor (Malay States) 1935-38. The Madras (India) epidemics, 1928-29, lacked in most cases the conjunctivitis, though the picture of keratitis was the same as in my cases.

CONTROL OF FERTILITY WITHOUT CONTRACEPTION

J. V. Schwind, M.D.
TACOMA, WASH.

Prevention of pregnancy by other than contraceptive methods is a matter deserving of more attention than most physicians give it. One finds that many patients who, because of religious taboos or for other reasons, have asked doctors about the natural or "rhythm" method of birth control, have been told that it is not sufficiently reliable to be depended upon. This is definitely not true in the majority of cases and usually such an answer by the physician is due to the fact that he has not acquainted himself with the fundamental principles of the rhythmicity of fertility, or else he does not care to take the time to explain the method to the patient.

The fertility chart (fig. 1) here presented is a composite of several more complex articles simmered down into a simple one that the busiest physician should be able to apply to his patient with a minimum of time consumption. This chart covers the periodicity range of most girls with a regular cycle and is self-explanatory. For instance, a girl with a menstrual cycle of twenty-nine days (from the first day of menses to the next first day) has a fertility period of eight days, that is, from the eleventh to the eighteenth day inclusive (following the beginning of a period). Therefore, from the first to the tenth day is a "safe period," and following the eighteenth day the safe period is resumed.

No amount of sexual intercourse during the safe period will produce a pregnancy as there is no egg to be fertilized. The egg is discharged at about the midpoint of the fertile periods designated, and it has to be fertilized by a sperm within one day or it dies, and the fertilizing power of a sperm is lost approximately two days after its discharge. Therefore, if we allow about four days before and after ovulation, there is little chance for a pregnancy.

The most practical way to make this fertility cycle method of birth control effective is to find one's fertile period on the fertility chart and then superimpose this information on a small calendar

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[18] Jancke, G.: Tierversuche als Beitrag zur Frage der Entstehungsweise, etc. Klin. Monatsbl, f. Augenh. 105: 7-15, July, 1940.

[19] Scheerer, R.: Zur Frage der Keratoconjunctivitis epidemica. Klin, Monatsbl, f. Augenh. 105:110-111, July, 1940.

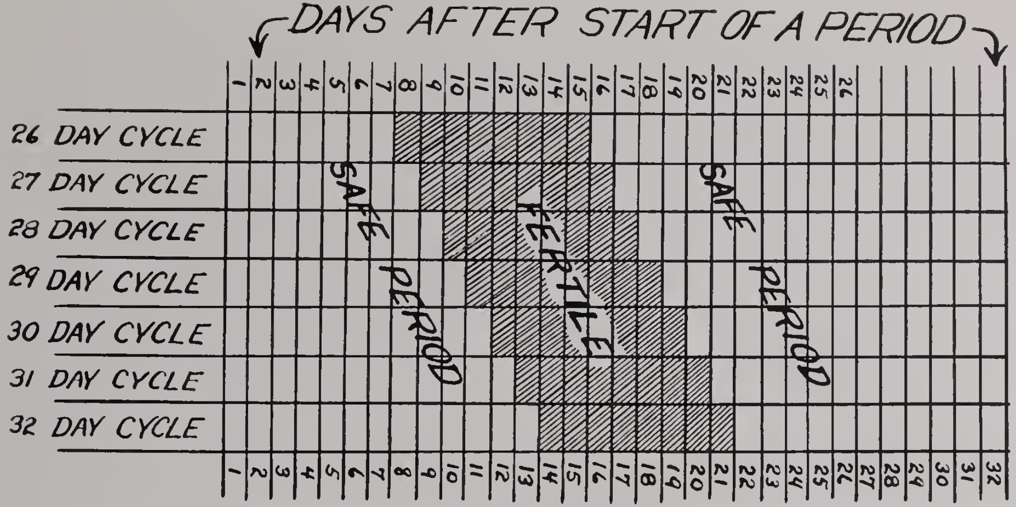
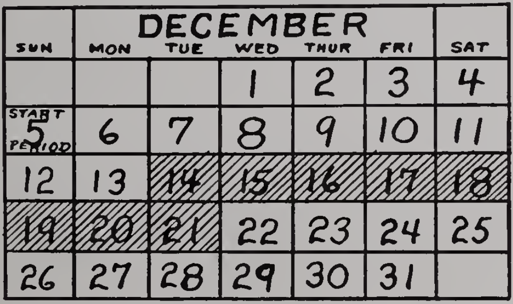


Fig. 1. Natural birth control chart.

(fig. 2). For instance, a regular twenty-eight-day cycle girl, whose period began December 5, counts ahead nine sterile days, marks off eight fertile days and leaves the rest of the month blank as safe days up to the following month's cycle.

Latz[1] has carefully recorded the sex life of 379 women who performed 15,924 uncontracepted intercourses during the safe period without incurring a pregnancy. One must admit that this is a fairly good test of the effectiveness of the method. Many of the cases had irregularities of their periods.



SUN	MON	TUE	WED	THUR	FRI	SAT
			1	2	3	4
START 5 PERIOD	6	7	8	9	10	11
12	13	▨ 14	▨ 15	▨ 16	▨ 17	▨ 18
▨ 19	▨ 20	▨ 21	22	23	24	25
26	27	28	29	30	31	

Fig. 2. Fertile period of a 28-day cycle girl with period starting December 5. White spaces are safe days.

Girls who have a moderate degree of irregularity can also use the natural method of conception control by adding the number of days of irregularity to the end of the fertility period. For instance, a girl keeps a written record of her periods for a few months and finds that her cycle varies from twenty-eight to thirty days in different months. She should use the twenty-eight day cycle on the chart, but add the two days of variability to her fertile period, making the fertile period from the tenth to the nineteenth day, instead of from the tenth to the seventeenth as seen on the regular chart. Or, a girl who varies from twenty-seven to thirty-two days should add the difference of five days (32 minus 27) to the fertile period of the shortest or twenty-seven day cycle, making a fertility period from the ninth to the twenty-first day.

Before a girl's cycle is determined she should be required to keep a written record of her menses for at least six months to detect any irregularity. The information that the average girl gives from memory of her previous menstrual periods is not sufficiently reliable to be depended upon to determine her fertility cycle. Girls with grossly irregular periods had best decide to raise a large family, if they do not choose to use artificial contraception, as it is next to useless to try to determine a safe schedule for widely varying menstrual periods.

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[1] Latz, L. J.: Natural Conception Control. J. A. M. A. 105:1241-1246, Oct. 19, 1935.

DEATH FROM USE OF HOME TREATMENT ELECTRCAL DEVICE

"Any sort of self treatment by electric devices—home made or procured from unscrupulous manufacturers or their sales agents—may cause death by electrocution when applied by inexperienced and unskilled lay persons," Richard Kovacs, M.D., New York, warns in *The Journal of the American Medical Association* for June 6.

Dr. Kovacs' admonishment is contained in a report on a Long Island, N. Y., clergyman who was found dead in his room, a victim of an attempt to treat pain in the back of his neck with a violet ray machine. Undoubtedly he had "grounded" the machine in the mistaken belief that by so doing he would increase the strength of the current and thus the efficiency of treatment.

DYSENTERY CARRIERS

Since it is only slightly absorbed into the blood stream succinylsulfathiazole, a sulfonamide compound, is much less likely to produce severe toxic or poisonous reactions than sulfaguanidine in the treatment of dysentery carriers, William M. M. Kirby, M.D., and Lowell A. Rantz, M.D., San Francisco, report in *The Journal of the American Medical Association* for June 20. They found succinylsulfathiazole to be as effective in treating dysentery carriers as sulfaguanidine and as ineffective in treating typhoid carriers.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING
PORTLAND, SEPT. 9-11, 1942

ANNUAL MEETING OREGON STATE MEDICAL SOCIETY

PRELIMINARY ANNOUNCEMENT

There will be three speakers who will be guests of the State Medical Society and one who will be guest of the Portland Academy of Medicine. It was the suggestion of the Academy that its guest lecturer, Dr. George E. Fahr, be invited to speak at a time that would coincide with the state meeting, and all members of the State Society are cordially invited to attend. This unsolicited cooperation is greatly appreciated, during these busy times especially, but would be equally welcome any year.

List of Speakers

Louis A. Buie, Professor of Proctology, University of Minnesota Graduate School.

Charles M. Gruber, Professor of Pharmacology, Jefferson Medical College.

John W. Harris, Professor of Obstetrics and Gynecology, University of Wisconsin School of Medicine.

George E. Fahr, Professor of Internal Medicine, University of Minnesota Medical School.

Topics so far received are as follows:

Dr. Gruber:

"The Pharmacology and Clinical Application of Dilantin in Treatment of Epilepsy."

"Similarities and Dissimilarities in Actions of Barbiturates and Thiobarbiturates and Their Uses in Clinical Medicine."

"Pharmacology, Toxicology and Clinical Application of Demerol; a New Analgetic Agent."

Dr. Harris:

"Some Practical Aspects of Pain Relief in Labor—Its Hazards and Limitations."

"Management of Abortions."

"Menopausal Bleeding—Causes and Treatment."

Dr. Fahr:

"What Is Congestive Heart Failure?"

"Rational Treatment of Congestive Heart Failure."

"Some Interesting Cases of Chronic Genuine Nephrosis Showing Hypertension and Renal Insufficiency."

PORTLAND ACADEMY OF MEDICINE

ANNOUNCEMENT OF MEETINGS

Speaker: Dr. George E. Fahr.

Time: September 8-10, 1942, 8:00 p.m.

Place: University of Oregon Medical School Auditorium.

Subjects:

1. "What Is Congestive Heart Failure?"
2. "Rational Treatment of Congestive Heart Failure."
3. "The So-called Irritable Heart of the Soldier."

All members of State Society and Multnomah County Medical Society are invited to attend these lectures.

Introducing the Guest Speaker

Dr. Fahr, native of Pennsylvania, graduated in medicine from the University of Würtzburg in 1909. After serving as Assistant in Physiology for a year he returned to this country and for a time was instructor in medicine in the University of Wisconsin. Transferring to University of Minnesota as Associate Professor of Medicine in 1923, he was later elevated to the Professorship of Medicine, his present position.

Former students and others rate Dr. Fahr as an excellent and dynamic teacher, an engaging speaker and an authority in the field of internal medicine, particularly on diseases of the heart and kidney.

The first lecture will be a discussion of Dr. Fahr's experimental studies on the pathologic physiology of congestive heart failure as produced in the laboratory, how exactly the same factors are prevalent in human heart failure and how digitalis acts very definitely in relieving the pathologic factors of the circulation. The timely character of the third lecture is evidenced by the title. During the first world war Dr. Fahr had a very considerable experience with this condition, at that time termed "neurocirculatory asthenia."

ORGANIZATION ACTIVITIES

Plans for the State Medical Society meeting in September are moving along. All guest speakers have assured us of their desire to go ahead and tentative titles have been submitted. It may be necessary to shorten the meeting to two days instead of the customary three or four because of conditions, and this will be accomplished by elimination of the panel groups by society members. As a matter of fact, the meeting may even be cancelled by request of the Army up to the last minute.

At the June meeting of the Council, which was held in Portland, no matter of business was brought to a point where it could be satisfactorily reported upon. Several items were referred to committees for further study and subsequent report. Dr. Leslie Kent told of the enthusiasm with which the refresher course in obstetrics was received throughout the state, and commended highly the type of instruction given by Dr. Hesseltine.

STATE BOARD OF HEALTH

Mr. Curtiss M. Everts, Jr., who was recently granted a leave of absence to enter active military service, has now been assigned a post as instructor at Fort Riley, Kansas.

The Merit System Office has just announced examinations for professional personnel employed in the Oregon State Board of Health and the Crippled Children's Division of the University of Oregon Medical School.

Vernon A. Douglas has been granted a leave of absence as Marion County Health Officer and has assumed the post of Medical Officer for Oregon Civilian Defense, with offices in Salem.

It is expected that an appointment will be made in the very near future in order that the duties of Health Officer may be carried on during Dr. Douglas' absence.

Gerhard B. Haugen, who has just completed a year of postgraduate work at John Hopkins School of Hygiene and Public Health, will return to the Oregon State Board of Health to assume the position of Director of the Division of Mental Hygiene. He will relieve Curtis R. Chaffin of the United States Public Health Service, who has been acting director.

Dr. Chaffin is being transferred to the U. S. Marine Hospital at Ellis Island, New York, where he will engage in clinical work in the Neuopsychiatric Division of that hospital.

David W. E. Baird, associate dean of the medical school, has taken the title of acting dean as announced by Chancellor F. M. Hunter of the Oregon State Board of Higher Education, due to the sabbatical leave of Dean Richard B. Dillehunt, which was granted at the April meeting of the Board.

Dr. Baird, 43, took over the school leadership when Dean Dillehunt was stricken ill a year ago this month (July). Dr. Dillehunt will continue to study and rest during the coming year. Dr. Baird is a native Oregonian, born and reared in Baker. He graduated from the University of Oregon Medical School and is a specialist in internal medicine. He is married and has two children, Mary, 15, and Mike, 11. He is a musician and artist and is a golf enthusiast. The "pros" often discuss the role of anatomic analysis as a means of improving their games.

Dr. Baird and the entire school will face new problems when the expected war call of the school's hospital unit comes. Indications are that the summons will come soon. Already 36 members of the school's 225 faculty members have joined the armed forces and with the calling of the hospital unit, 55 more will go, making a total of 90 faculty members no longer available for teaching the heavier-than-normal enrollment of medical students.

The reduced faculty must work harder than ever to maintain the Northwest's Medical School. Their load will further increase as private practice is concentrated on a fewer number of doctors.

The school's new "streamlined" course, medical students graduated in three instead of four years, started June 22 with 275 students registering after one week's "summer vacation." Seventy-five freshmen and 200 "veterans" returned to the campus.

Taking note of the student's week of vacation, in which he crammed all his rest, fishing, swimming and sunbathing (except there was no sun), into seven days, Ralf Couch, secretary, expressed concern: "The entire accelerated program brings up the question of physical facility and the ability to maintain health and grades." In other words, how well will Jack do with all work and no play?

Incidentally, the switched-around school calendar will make next year's commencement exercises about March 20 instead of the usual June 10 or thereabouts. And there will be three months overlapping of internships.

Dr. Laurence Noall, assistant professor of orthopedic surgery, recently returned from postgraduate study at the University of Minnesota, where he studied new methods of infantile paralysis treatment as presented by Sister Kenney, ruddy, backwoods nurse of Australia, who recently has attracted attention for her theories of polio and its management. Dr. Noall returned enthusiastic about Sister Kenney's findings.

Miss Grace Phelps, veteran superintendent of Doernbecher Children's Hospital, now serves the hospital on a part-time retired basis. Succeeding her is Miss Eleanor Baird of Minnesota who recently has completed her studies for her master in pediatrics. Miss Phelps has been with Doernbecher since it opened in 1926. Her record is one of constant service to the work of making sick tots well again.

SOCIETY MEETINGS

SOUTHERN OREGON MEDICAL SOCIETY

The Southern Oregon Medical Society held its 51st annual meeting on June 13 at Chalker's Inn on the Rogue River. Dr. Leo Eloesser, Professor of Clinical Surgery at Stanford, spoke on "Treatment of Compound Fractures in War Time." Dr. Henry Cline Fixott, Professor of Radiography, Jurisprudence and Economics, North Pacific Dental College, Portland, addressed the society on "Planigraphy of the Teeth and Head."

O.P.S. SIGNS THE OREGON SHIP CONTRACT

This is big news, the biggest single contract for prepaid medical care ever written by a physicians mutual service bureau; 25,000 employes is a conservative estimate, 50,000 an optimistic one. Two dollars and sixty cents per employe per month means a gross income for the conservative estimate of $65,000 per month, or $780,000 per year. For those who are naturally optimistic, double all the figures.

This contract is written in conjunction with the Northwest Hospital Association and with the cooperation of the Board of Directors of the Multnomah Medical Service Bureau and the Multnomah County Medical Society.

O. P. S. has been described in these columns before. It is the Oregon Physicians Service (Bureau), the centralized state bureau for writing contracts with employed groups and in no way engulfs the existing county or district service bureaus. Local bureaus may consolidate with O. P. S. or may ask for its help in regard to certain contracts. O. P. S. and the local bureaus are to be considered as parts of the same organization, all working toward one goal, to provide a better form of medical care for employed groups on a prepayment basis.

In the above plan families are not given coverage for medical care but they may choose hospitalization coverage as they wish. Drugs are not included and the fee schedule is to be the full Accident Commission schedule at the start. This is another contribution of the mdeical profession to the war effort.

PACIFIC NORTHWEST MEDICAL ASSOCIATION

Officers for 1943

L. S. Gilpatrick, Spokane, President.
Geo. O. A. Kellogg, Nampa, President-Elect.
Donald G. Corbett, Spokane, Vice-President.
C. W. Countryman, Spokane, Secretary-Treasurer
R. M. Schultz, Spokane, Assistant Secretary.
J. B. Plastino, Spokane, Assistant Treasurer.

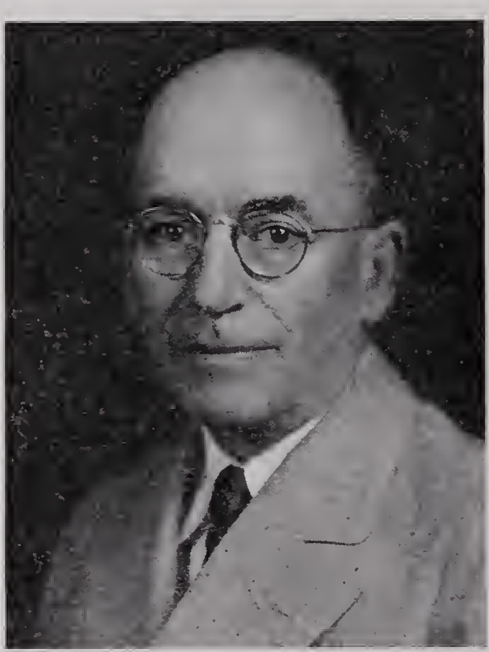
The 1943 convention will be held in Spokane, unless the meeting is cancelled.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SPOKANE, AUG. 17-19, 1942

WASHINGTON STATE MEDICAL ASSOCIATION

Fifty-Third Annual Session, Spokane
August 16-19
General Headquarters, Davenport Hotel



GEORGE W. CORNETT, *President*

PRESIDENT'S MESSAGE

All of us remember the great times we have had in Spokane with a people generous with their hospitality and cordial with their friendship. The medical profession has always looked forward to its gatherings in that city. This should be another banner year.

This may be the last get-together for many of us, at least for many months, perhaps years. We should make this 1942 meeting a gathering of friends and good cheer and to celebrate the victory and the peace that will be ours.

We shall have an excellent scientific program and exhibits with fine entertainment. I understand, also, that the Army will be on hand with an exhibit and speakers. Write the dates down and plan to attend. Bring the family.

In conclusion, I desire to thank all those who have aided me during my administration and I am deeply grateful to the profession for the honor it has bestowed upon me and the opportunity to serve it.

George W. Cornett, *President*

CONVENTION INFORMATION

The Annual Meeting will be held in the Davenport Hotel, where scientific sessions, commercial and scientific exhibits, House of Delegates, Woman's Auxiliary and other activities will be housed.

Registration and Information: Temporary location of registration and information desks will be in the lobby of the Davenport, Sunday, August 16. Beginning Monday, registration and information desks will be in the Elizabethan Room, Mezzanine floor. All persons are requested to register immediately upon arrival.

Programs: Convention program will be issued to all at time of registration.

Expenses: The state association will print and issue tickets at the time of registration, ticket costs to cover cocktails, annual banquet and dance.

Scientific Exhibits: All Scientific Exhibits will be held in the Hall of Doges.

Technical Exhibits: All technical exhibits will be held in the Elizabethan Room and Mezzanine Floor.

House of Delegates will meet in East Banquet Room.

State Association Offices: Room 200.

Exhibit Prize Awards: First and second prizes will be awarded to physicians (only) holding the winning numbers on their booth registration tickets issued at the time of registration. Drawings will be on Tuesday, August 18, at 5:15 p.m., and Wednesday at 12:15 p.m., in the Elizabethan Room. Lucky numbers must be in the room to win.

Golf: The Grand Sweepstakes Tournament will be held on Sunday, August 16, beginning at 12 o'clock noon, Spokane Country Club. The annual golf tournament of the Washington State Medical Golf Association will tee off at 8:00 a.m., on Monday, August 17, Spokane Country Club, with the awarding of prizes at the annual golf banquet held the same evening at the country club.

SPOKANE COMMITTEES FOR STATE MEETING

General Chairman, James G. Matthews.
Entertainment: R. D. Reekie, W. H. Tousey and Fred J. Whitaker.
Registration: R. M. Schulte, Elizabeth White and Max S. Wright.
Contracts: John H. O'Shea, R. E. Ahlquist and James M. Nelson.
Publicity: Donald A. Palmer, Robert P. DeRiemer and Ralph Clark.
Transportation: R. G. Boyd, F. R. Fischer, Frank W. Milburn and R. J. Bailey.
Golf: David W. Gaiser, Donald Corbett, Melvin Aspray of Spokane; Herbert C. Lynch, John P. Loudon of Yakima.

PROGRAM

(Incomplete)

Sunday, August 16

10:00 a.m. to 12 noon—Registration.
12:00 noon—Golf, Grand Sweepstakes Tournament.
2:00 to 4:00 p.m.—Registration.
4:00 p.m.—Meeting of Committee on Medical Defense.
6:00 p.m.—Meeting of Board of Trustees (Dinner).
6:30 p.m.—No-host dinner for golfers and convention guests. Grand Sweepstakes prize awards presented. Everyone invited.

Monday, August 17

8:30 a.m. to 5:00 p.m.—Registration, Elizabethan Room.
8:00 a.m.—Annual Golf Tournament, Washington State Medical Golf Association, Spokane Country Club.

10:00 a.m.—Meeting of County Medical Bureau Managers.

7:00 p.m.—Banquet, Medical Bureau Managers.

7:00 p.m.—Annual Dinner, Washington State Medical Golf Association, Spokane Country Club. Prize awards Election of officers.

Tuesday, August 18

8: a.m.—Meeting of the House of Delegtaes, Wilmot O. Read, Speaker.

SCIENTIFIC PROGRAM

All morning sessions held in Marie Antoinette Room

9:00 a.m.—Paul B. Nutter, Spokane: "Diagnosis and Treatment of Peptic Ulcers with Special Reference to Radiation Therapy."

9:20 a.m.—Alex D. Campbell, Seattle: "Everyday Problems in Treatment of Syphillis."

9:40 a.m.—David Metheny, Seattle: "Cancer of Stomach with Kodochrome Slides."

10:00 a.m.—James E. Stroh, Seattle: "Treatment of Acute Asthmatic Conditions."

10:20 a.m.—Oliver J. Morehead, Ritzville: "Use of Vitamins in General Practice."

10:30 a.m.—Meeting of Resolutions Committee.

10:40 a.m.—Intermission. Visit Exhibits.

11:00 a.m.—Charles B. Ward, Seattle: "The Radiation Treatment of Menopausal Bleeding."

11:20 a.m.—Speaker from National Physicians Committee.

12:00 noon—Army, Navy and Procurement Luncheon.

Afternoon Scientific Session

2:00 p.m.—Pediatric Panel. Verne W. Spickard, Seattle, Chairman.
"Premature Infant." This phase to be presented by Willard B. Rew, Yakima, and Walter B. Seelye, Seattle.

2:00 p.m.—*Circulatory Mechanism Panel. C. H. Hofrichter, Seattle, Chairman.

3:40 p.m.—Intermission. Visit Exhibits.

4:00 p.m.—Leo Eloesser, San Francisco, Guest Speaker. "General Emergency Treatment of Traumatic Conditions."

5:15 p.m.—Drawing for prizes for those who have visited and registered at exhibits. Elizabethan Room.

6:30 p.m.—Cocktail Hour.

7:00 p.m.—Annual banquet for members and their wives (Informal).

9:00 p.m.—Dance.

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*Panel speaker to be announced.

Wednesday, August 19

All morning Scientific Session in Marie Antoinette Room

9:00 a.m.—R. D. Forbes, Seattle: "Complications in Biliary Surgery."

9:20 a.m.—Alfred O. Adams, Spokane: "Ununited Fractures of Tibia in Children."

9:40 a.m.—K. K. Sherwood, Seattle: "Treatment of Chronic Arthritis." A review and evaluation of newer methods of therapy, with special emphasis on Gold and Vitamin D.

10:00 a.m.—N. K. Rickles, Seattle: "Psychoneurosis of Wartime."

10:20 a.m.—Lester J. Palmer, Seattle: "The Diabetic in the Defense Program."

10:40 a.m.—Intermission. Visit Exhibits.

11:00 a.m.—Leo Eloesser, San Francisco, Guest Speaker. (Subject to be determined.)

12:00 noon—Installation of Albert P. Duryee, Everett, as President of Washington State Medical Association.

12:15 p.m.—Drawing of prizes.

12:30 p.m.—Luncheon sponsored by Washington State Medical Service Bureaus. Everyone invited.

Afternoon Scientific Session

2:00 p.m.—Obstetric Panel. R. S. Mitchel, Wenatchee, Chairman.

1. C. W. Knudsen, Seattle: "Induction of Labor."
2. N. L. Thompson, Everett, "Obstetric Hemorrhage."
3. John Brougher, Vancouver: "Second American Congress on Obstetrics and Gynecology."

2:00 *Panel on Eye, Ear, Nose and Throat.

3:40 p.m.—Intermission. Visit Exhibits.

4:00 p.m.—Meeting of House of Delegates.

4:00 p.m.—*Panel on Fractures and Immediate Care.

4:00 p.m.—*Panel on Chest Injuries. Byron F. Francis, Seattle, Chairman.

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*Subjects and speakers to be announced.

There will be moving pictures of various subjects presented during the morning and afternoon sessions.

WASHINGTON STATE MEDICAL GOLF ASSOCIATION TOURNAMENT

Golf Headquarters, Davenport Hotel

SCHEDULE OF EVENTS

Spokane Country Club

Sunday, August 16

Registration, all day, Davenport Hotel.

12:00 noon—Tee-off for Grand Sweepstakes, 18 holes on full handicap, Spokane Country Club. Valuable and useful prizes will be awarded for this event at the no-host dinner.

6:30 p.m.—No-host welcome dinner, Davenport Hotel. Grand Sweepstakes prize awards given at this dinner. All doctors and wives welcome. Dinner sponsored by Entertainment Committee of Spokane Medical Society.

Monday, August 17

Registration, all day, Davenport Hotel.

ANNUAL GOLF TOURNAMENT

Spokane Country Club

D. H. Houston, *State Chairman*

7:00 a.m. to 2:30 p.m.—Tee-off time.

1. Championship and runner-up—36 holes gross.
2. President, George W. Cornett Trophy—18 holes net.
3. W. A. Taylor Trophy—36 holes net.
4. A. A. Strauss Trophy—Seniors, 18 holes net.
5. Shaw Trophy—Four-man-team, intercounty contest.
6. Section Contest (Prizes in Every Section)—Medicine, Surgery, Orthopedic and Traumatic Surgery, Pediatrics, Obstetrics and Gynecology, X-ray and Physiotherapy, Urology and Dermatology, Eye, Ear, Nose, Throat and Pathology.
7. Class Contests: Class A (0-12); Class B (13-18); Class C (19-24), and Class D (25-30).

7:30 p.m.—Annual Golf Dinner, Spokane Country Club, Golf prizes awarded.

WOMAN'S AUXILIARY

STATE CONVENTION PROGRAM

The eleventh annual convention of the Woman's Auxiliary to Washington State Medical Association will be held in Spokane, August 16-19, with headquarters at the Davenport Hotel.

Spokane County Auxiliary is delighted to act as hostess for this convention and extends to each auxiliary member a most cordial invitation to attend both the business sessions and the entertainment features. We hope to provide pleasing entertainment without monopolizing all of your time as we can assure you all plenty of warmth and sunshine at that time in August.

We hope you will come and enjoy every moment of your stay with us.

Mrs. James Cunningham,
President.

State Convention Chairmen

General Chairman—Mrs. James Cunningham
Assistant Chairman—Mrs. Leland S. Harris
Decorations—Mrs. Clyde Countryman
Exhibits—Mrs. Max Wright and Mrs. Robert Howard
Finances—Mrs. Frederick Miller
Golf—Mrs. David Gaiser
Press and Publicity—Mrs. John Finney
Regulations and Credentials—Mrs. F. J. Whitaker
Social—Mrs. Carroll Smith
Transportation—Mrs. Russell Hanford
Convention News Letter—Mrs. Oscar Proctor

Sunday, August 16

4:00 to 8 p.m.—Registration: Mezzanine Floor, Davenport Hotel. Registration fee, $1. Tickets for golf and luncheons may be purchased at registration desk.

Monday, August 17

8:00 a.m. to 5 p.m.—Registration, Mezzanine Floor, Davenport Hotel.

8:45 a.m.—Golf Tournament. Send entry handicap to Mrs. David Gaiser, 841 Cliff, Spokane.

12:00 noon—President's No-Host Breakfast. East Banquet Room, Davenport Hotel. For all past state presidents and Advisory Committee.

2:45 p.m.—Preconvention Board Meeting. Davenport Hotel. Board members only.

7:00 p.m.—Buffet Supper. Manito Golf Club. Golf Tournament awards presented.

Tuesday, August 18

8:00 a.m. to 12 noon—Registration. Mezzanine Floor, Davenport Hotel.

9:00 a.m.—General Meeting. Mrs. James H. Berge, President, presiding.
Greetings—Mrs. James Cunningham, President,
Spokane County Auxiliary.
Response.
Presentation of Guests.
Greetings—Dr. George W. Cornett, President,
Washington State Medical Association.
Roll Call of Delegates.
Reading of Minutes—Mrs. S. H. Tashian, Secretary
Annual Reports:
President—Mrs. James H. Berge
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Bulletin Circulation—Mrs. Irvin A. Weichbrodt
Exhibits—Mrs. Max Wright
Historian—Mrs. H. D. Fritz
Hygeia—Mrs. Delmar F. Bice
Legislative—Mrs. R. E. Ahlquist
Organization—Mrs. H. J. Whitacre
Press and Publicity—Mrs. George J. Vandenberg
Program—Mrs. Roger Anderson
Public Relations—Mrs. Emmett L. Calhoun
Report of National Convention.
Reoprt of Committee on Registration,
Mrs. F. J. Whitaker.
Report of Nominating Committee,
Mrs. George E. Hoxsey.
Announcements.
Election of Officers.

1:00 p.m. Luncheon, Spokane Country Club. Pan American speakers.

7:00 p.m. Annual Dinner Dance.

Wednesday, August 19

8:00 to 9:00 a.m.—Registration, Mezzanine Floor, Davenport Hotel.

9:00 a.m.—General Meeting (continued), Davenport Hotel.
Roll Call.
Minutes of Tuesday Session, Mrs. S. H. Tashian.
Recommendations of Vice-President and Reports of County Presidents.

First Vice-President, Mrs. Joseph L. Greenwell,
introducing Mrs. James Cunningham, Spokane;
Mrs. J. W. Ingram, Walla Walla.

Second Vice-President, Mrs. Arthur Skarperud,
introducing Mrs. B. O. Swinehart, Grays Harbor,
Mrs. H. J. Whitacre, Pierce.

Third Vice-President, Mrs. David J. Lawson,
introducing Mrs. Nathan L. Thompson, Snohomish,
Mrs. Howard Keyes, Whatcom.

Fourth Vice-President, Mrs. J. C. Brougher,
introducing Dr. Phyllis Leibly, King,
Mrs. Curtis Macomber, Kitsap.

Sixth Vice-President, Mrs. Kay England,
introducing Mrs. N. M. Bellas, Chelan,
Mrs. L. S. Harris, Yakima.

10:30 a.m.—Talk on Defense, Dr. M. Shelby Jared.
Final Report on Registration, Mrs. F. J. Whitaker.
Report of General Chairman, Mrs. James Cunningham
Report of Resolutions Committee.
Announcements.

11:30 a.m. to 12:30 p.m.—Conference of Incumbent and Incoming State Chairmen with their Respective County Chairmen.

1:00 p.m.—Annual Auxiliary Luncheon. Spokane City and University Club.
Installation of Officers.

3:00 p.m.—Postconvention Board Meeting. For all new members of Board. Mrs. Emmett L. Calhoun, presiding
Drives and garden tours will be arranged.

TECHNICAL EXHIBITORS

(Incomplete)

Aetna Insurance Company
Bordens Milk Company
Carnation Milk Company
Ciba Products
Consolidated Dairies
Fleet Phoso Soda
Fischer X-Ray Company
General Electric X-Ray Co.
Gerber Products
Harrower Laboratories
Holland Rantos
Junket Folks
Lederle Laboratories
Lilly Eli
Mead Johnson
Merrell Wm. S.
Morning Milk Company
Morris, Philip
Ortho Products
Pet Milk Company
Petrogalar Company
Physicians and Hospital Supply Co.
Sandoz Chemical Company
Shadel Sanitarium
Squibb, E. R. and Sons
Standard X-Ray Company
United Pacific Insurance Co.
United Pacific Insurance
Westinghouse X-Ray Co. and Hoag X-Ray Co.
White Laboratories
Winthrop Chemical Co.
Wyeth John and Brother

MEDICAL NOTES

New Hospitals. King County Hospital in Seattle is to receive a federal grant of $775,000 for a 200-bed addition. Due to the lack of certain materials, the building will probably be of a semitemporrary nature.

Assurance of federal aid to the extent of $661,000 has been given Bremerton for construction of a new 140-bed hospital. Facilities in that city were very inadequate even before the war boom and since then the condition has been critical.

In Vancouver, the contract for a $221,000 hospital has been awarded with preliminary work already under way. The building will be of brick veneer and will contain six surgeries. There will also be an emergency unit containing twenty-four rooms for the exclusive use of shipyard workers.

Hospital Bequests. The Seattle Orthopedic Hospital been made the principal beneficiary of the fortune of A. H. Jordan, president of the Everett Pulp and Paper Company, who died May 30. The estate is estimated at about $1,250,000. Everett General Hospital will also benefit about $200,000 from the estate.

Olympia Hospital Addition. Construction of a new, $75,000 wing to St. Peter's Hospital has been approved by the U. S. Public Health Service to house nurses and other hospital personnel and open up an additional 100 beds for patients in the present building.

County Health Head Resigns. Dale Garrison has notified Jefferson County Commissioners of his resignation. He has also resigned as Port Townsend health officer.

New Location. Benton C. Wilson has opened an office for the practice of medicine and surgery in Everett. He is a graduate of University of Cincinnati and formerly practiced in Medford, Oregon.

Hospital Reorganization. The Ellensburg General Hospital Association has been reorganized for the purpose of maintaining the hospital on a nonprofit basis. This was done to eliminate taxes which were assessed against the private corporation in order that hospital charges might be kept within actual operating costs.

OBITUARIES

Dr. H. Z. Dean of Prosser, 72, died May 14 after an illness of several months from which he had been apparently improving. He was born in Wisconsin and after practicing at Davenport and Cheney in this state for short periods, settled in Ellensburg, where he practiced for twenty-two years, moving to Prosser one year ago. While in Ellensburg he served as county physician, health officer and coroner.

Dr. John A. Johnson of Tacoma, aged 65, died June 12 after a long illness. He was medical examiner for the United States Veterans Bureau and was a retired lieutenant colonel in the United States Army. He specialized in diseases of the eye, ear, nose and throat.

Dr. Paul Cole of Spokane died June 12 of pneumonia in Deaconess Hospital where he had recently completed his internship. He attended Washington State College and was a graduate of University of Oregon Medical School.

BASIC SCIENCE AND MEDICAL EXAMINATIONS

The Director of Licenses for the State of Washington desires to call attention that the basic science and medical examination are scheduled for the following dates:

BASIC SCIENCE: Anatomy Building, University of Washington, Seattle, Room 108, 8:00 a.m., Thursday and Friday, July 30 and 31.

MEDICAL: Social Science Hall, University of Washington, Room 120, 8:00 a.m., Monday, Tuesday and Wednesday, August 3, 4 and 5.

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, SEPT. 16-19, 1942

MEDICAL NOTES

New Hospital. The United States Navy will build a $4,500,000 hospital as a part of the huge naval training station now being constructed on the southern tip of Lake Pend Oreille. The project will consist of one hundred one-story buildings, housing 1,500 beds, and will cover several hundred acres.

To Aid Crippled Children. The Benevolent and Protective Order of Elks will construct a ten- or fifteen-bed home, where crippled Idaho children may convalesce free of charge.

New Locations and Appointments. T. N. Braxtan has been appointed Boise city physician to replace H. M. Chaloupka, who has resigned to enter the Navy Medical Corps. Harold W. Stone of Boise has resigned his membership in the state board of medical examiners to enter the military. Charles H. Sprague of Boise has accepted a position on the headquarters staff of the American College of Surgeons. For the past five years he has practiced his specialty in internal medicine. Joseph Saltzer, formerly of Homedale, has opened an office in Nampa. Rlssel R. Craft, formerly of Marysville, Calif., has established a maternity home in Boise.

OBITUARIES

Dr. C. O. Moore of Paris, aged 55, widely known physician, died May 27 in a Salt Lake hospital following a short illness. He was born in St. Louis, Missouri, December 14, 1886. He received his degree from the medical school of Creighton University in Omaha, Nehraska. In 1916 he moved to Paris, where he has since lived except during the period of the first world war which he entered as a first lieutenant and rose to the rank of major.

Dr. R. G. McCall of Sand Point died of cardiac disease May 10, aged 50 years. He practiced in Oregon and California for twenty-three years but illness forced him into retirement. He engaged in mink fur farming and in this field became well known throughout the Northwest.

CLINICAL FORUM

PEDIATRIC PROBLEM

This was a male infant admitted to the hospital at three weeks of age because of jaundice of four days duration. The family history was not helpful, there being one other child in good health, whose neonatal course had been entirely uneventful. So far as was known, labor had been without trauma and the birthweight was eight pounds.

During the first two weeks the infant gained fairly well on an evaporated milk and Karo formula and absolutely no deviation from the normal was noted by either the physician or the family. Physical examination at the time of admission showed the baby to be apathetic, slightly emaciated and weighing four ounces less than the birthweight. The skin was moderately jaundiced, the temperature 99.6°, and neither the liver nor spleen was palpable.

Laboratory data included a urine specimen containing albumin, pus, a few red blood cells and a few bacteria. There were 3.6 million red blood cells per cubic millimeter, the icteric index was 200, and the white blood cell count 15,000 per cubic millimeter. No immature forms of the erythrocytic series were noted. There was no analysis of the stools but they are described in the nurses' notes as being "soft and light yellow." No serologic tests were obtained on the baby's blood but the Kahn procedure was negative on samples from both the mother and the father.

This case presents a fairly common condition but frequently goes unrecognized. What would be your diagnosis and treatment?

COMMENTS ON OBSTETRIC PROBLEM IN JUNE ISSUE.

First commentator's views: In commenting on this problem, there are words of commendation to be given as well as criticism. For about two years there has been a law requiring physicians to take wassermanns on all pregnant patients the first time they appear at his office. One wonders why no wassermann had been taken before she was six or seven months pregnant. The doctor is to be commended for the fact that he at once prepared blood donors as soon as his diagnosis of placenta previa had been made. It would appear to be much better obstetrics, after rupturing the membranes and presumably hemorrhage had stopped, to let things alone and allow the labor to proceed according to expectation.

After the fetal membranes have been ruptured and stripped back over the head, labor is absolutely certain to have onset, usually within a few hours, but at most within a few days and the less interference that takes place, so much the better. It seems to me, there was too much handling of this case, especially since all attempts to induce labor were futile. There appears to be considerable bugbear about the rupture of membranes and the terrible things that will happen afterwards. Perhaps statistics are against us, but experience makes me feel that, after the membranes have been ruptured under very strict aseptic conditions, if the patient be left absolutely alone for three, four or five and even six days, labor always ensues. A certain variable period of time is always necessary for preparation and effacement of a cervix that is long or rigid or both at the time of rupture of the membranes.

It does not sound like good obstetrics, when a patient has a chill and the temperature rockets, to further insult the uterus by putting a Voorhees bag within the cervix. Many times high fever does not mean necessarily bacterial invasion, but rather a disturbed uterus. Often times one sees after a prolonged hard labor, or the very last part of that labor, the temperature rises to 102° or 103°, perhaps with a chill, rapid pulse and other disturbing symptoms, all of these dropping to normal within just a few hours after delivery of the baby, especially if it is noninstrumental delivery or without too much interference.

In view of the above, it would appear best to leave this patient alone, as probably too much has been attempted already to force labor when pretty surely the cervix was not ready for it. Give the patient ample fluids, salfathiazole, also aspirin to assist in relieving the fever, then if the uterus is not too sore or the flanks too tender, give a laxative or high enema. Labor will follow and probably a spontaneous delivery, although possibly the baby might be dead by that time. But a cesarian should not be contemplated under these circumstances. As a last resort, gentle manual dilatation of the cervix should be done, followed by podalic version and delivery.

Second commentator believes: Cause of the fever is uncertain, but I would doubt if rupture of the membrane would cause it. I suspect a pyelitis, but it may be a bacteremia or even a septicemia because there is a foul smelling vaginal discharge. Since the patient is not bleeding, an alternative would be to institute sulfonamid therapy, transfuse again if hemoglobin and red cells are low and allow labor to ensue naturally.

A special nurse should be in attendance because of the danger of further bleeding from the placenta marginalis. Certainly, since this patient is approximately one month from term, it would be desirable to wait two weeks or so before delivery of the baby. During this interval measures to combat the infection should allow the patient's condition to improve, and certainly spontaneous delivery would be desirable.

If the Voorhees bag comes out without inducing labor, the patient should be kept in bed and treated expectantly until the infection subsides and temperature returns to normal. If excessive bleeding should occur during this time before labor begins, an extra peritoneal cesarian section could be performed. However, since this is a marginal placenta previa and the cervix is quite soft and dilatable, manual dilatation and podalic version could be done.

Third commentator states: I think I could have thought of one or two small added complications which might have made it a little tougher. While I know it is not pertinent to the problem as it is presented, I cannot help stating that immediately following the first examination, when the placenta previa was discovered in spite of the fact that it was marginal, I should have gone ahead right there and sectioned the patient.

In view of the fact that this patient has had several previous pregnancies and, assuming that the Voorhees bag dilated the cervix sufficiently, I think I would have done a version and pulled the fetus out. Certainly one could not add much to the infection that is already present. If the bag did not dilate the cervix sufficiently to deliver, I could see no other way than to do a section, remove the uterus, give the patient adequate sulfamedication, transfuse and pray. I hope I never get into a mess like that. I like the idea of these problems and hereafter shall watch for them.

Fourth commentator says: Since the diagnosis has been made and treatment given, comment on this part of the problem is probably irrelevant. Therefore, nothing will be said about it, though some pertinent remarks might be expressed. With the Voorhees bag in place and further hemorrhage presumably controlled, the patient should be left alone until pains start and the bag is expelled. Immediately following this the patient should be delivered, including manual removal of the placenta if necessary. Blood donors, of course, should be available (bearing in mind the Rh factor), and uterine tamponade in addition to pituitrin and the ergot preparations may be advisable.

The patient already having had a chill and fever earlier in the day from infection confuses the picture of the second reaction following the transfusion. However, it would not be amiss to consider this anaphylaxis and to treat it as such with adrenalin, caffeine, sodium benzoate and the other usual adjuncts.

Treatment of the infection might then be resumed with the sulfonamide drug of choice together with the other usual methods, depending on the cause or type of the infection. Certainly many of these are sapremic in character and subside after the uterus is empty. Treatment of the mother seems of primary interest with that of the fetus secondary, though preparations for reception of a premature infant should be made. The consideration of syphilis might properly be dispensed with as being entirely subordinate to the other more urgent conditions.

Conclusion of case: Attention is directed to the fact that the last report was at 11:45 a.m. Six-thirty p.m. that same day the patient's cervix was 3 cm. dilated and F.H.T. was normal. At 9 p.m. the cervix was 7cm. open, the Voorhees bag was removed and podalic version followed by extraction of a still-born male infant. Patient was again transfused.

At 11:40 p.m. her temperature was 107°. She was given glucose and saline, placed in an oxygen tent, given tepid baths and special nurses were obtained. Her temperature and convalescence were normal after the fifth postpartum day and she was discharged from the hospital on the eighth day.

BOOK REVIEWS

RABIES. By Leslie T. Webster, M.D., The Rockefeller Institute for Medical Research, New York. 168 pp., $1.75. The Macmillan Company, New York, 1942.

This book gives a brief but comprehensive statement of all phases of rabies by a good authority who has worked with The Rockefeller Institute for Medical Research. There are short and excellent chapters on the clinical picture of the disease in animals and in man, the cause of the disease, diagnosis and prevention, evaluation of anti rabies vaccines, management of dogs during an epidemic and prevention of the disease following exposure.

It is particularly important for doctors to know that this good authority gives a definite set of circumstances under which nitric acid cautery and Pasteur treatments are indicated. This is more important on account of the fact that about a year ago a statement was made in *The Journal of the American Medical Association* that the profession in general did not accept the idea of nitric acid cautery of rabies infected wounds. It should be understood that these measures are to be used with discretion, and it is reassuring to find that recommendations by this excellent authority are consistent with the policy of the Seattle Health Department during recent years.

The book contains a bibliography which is elaborate enough to give the impression that it probably includes all articles which have been published on the subject. An appendix contains many tabulations of findings in research work which has been done on the subject.

BRYAN NEWSOM

SEROLOGY IN SYPHILIS CONTROL; PRINCIPLES OF SENSITIVITY AND SPECIFICITY. With an Appendix for Health Officers and Industrial Physicians. By Reuben L. Kahn, M.S., D.Sc., Director of Clinical Laboratories and of Serologic Consultation Service, University of Michigan Hospital, etc. 206 pp., $3. The Williams & Wilkins Company, Baltimore, 1942.

With the general indiscriminate wassermanizing, and the tendency to depend upon the laboratory rather than the physician's acumen for diagnosis, more information regarding interpreting blood tests is a crying need. This book attempts to fulfill that need. Serologic technic is not covered, but the underlying principles are gone into most clearly and concisely. The whole 140-page book is of the handy 6x9 inches in size, printed in none too large type on a dull finish paper. One appendix of thirteen pages is written especially for the health officers. A second of thirty-two pages is for the industrial physician.

Among matters covered are the interrelationship of high sensitivity and specificity, history of the development of the various tests, relative sensitivities and specifications of different tests, the quantitative reactions, mass serologic testing for syphilis and the benefit which industry gains by mass serologic examination.

Those unsold to the value of the mass blood testing might accuse the author of writing this book as propaganda for letting the laboratory instead of the doctor make the diagnosis of syphilis. Such a theme is presented so subtly that one almost gets the idea that the physician need but to read the book, test everyone's blood and then practice library syphilology without needing to see the patient. The book should be exceedingly popular with armchair syphilologists and administrative officials. W. R. JONES

DERMATOLOGIC THERAPY IN GENERAL PRACTICE. By Marion B. Sulzberger, M.D., Lt. Comdr. (M.C.) U.S.N.R., Assistant Clinical Professor of Dermatology and Syphilology, Skin and Cancer Unit of New York Post-Graduate Medical School and Hospital of Columbia University, etc., and Jack Wolf, M.D., Attending Dermatologist and Syphilologist, Skin and Cancer Unit of New York Post-Graduate Medical School and Hospital of Columbia University, etc. 632 pp. $5.00. The Year Book Publishers, Inc., Chicago, 1942.

One common failing of the average textbook is that the author usually feels that, if he fails to mention some rare condition, someone will think he doesn't know about it. Dermatology undoubtedly excells all other fields of medicine in the myriad of conditions existent and nonexistent described. There are all conceivable and inconceivable variations of every disease. The result is that the average dermatologic textbook, in attempting to cover the entire literature and at the same time confine itself to one volume, does not give sufficient space to the common conditions which comprise 90 per cent of the cases seen. The authors of this volume not only state that it will be limited to common diseases, but they actually do so. The result is that they are able in a small textbook to give adequate attention to the minute details of dermatologic treatment.

In dermatology these details make a tremendous difference. It is attention to them which often explains why a dermatologist may clear up a case which has bothered a general practitioner without apparently doing anything much different in the way of treatment The methods and formulae described are highly successful in the hands of the senior author who is unquestionably one of the ablest dermatologists in the country. The general practitioner for whom this book was written can greatly improve his management of skin diseases by intelligent study of it.

A. D. Campbell.

Personality and Mental Illness, an Essay in Psychiatric Diagnosis. By John Bowlby, M.D., Psychiatrist, London Child Guidance Clinic, etc. 280 pp., $2.75. Emerson Books, Inc., New York, 1942.

In this well writen and easily read volume, the author initiates a much-needed change in psychiatric medicine, namely, more appropriate and applicable classification of psychologic illness. He represents a brief but inclusive discussion of the present rather didactic nomenclature, much of which has been outmoded, is misleading, and which is not applicable to our present-day concepts of the functional and mental illnesses. He emphasizes the general movement away from the rigid pigeon-holing of psychoses and psychoneuroses, and presents a very good working classification in which symptoms and the basic mechanisms producing these illnesses are utilized instead of the nondescriptive nomenclature which has been used in the past. The book is a valuable one, not only for the man specializing in the field of psychiatry, but also for the general physician who so frequently is at a loss in attempting to correlate the symptom picture of his patient into an adequate, workable classification. Though incomplete, by the author's own statement, and by no means the last word in modern classification of mental illness, it is a book worthy of one's reading.

W. Y. Baker

The Clarks; An American Phenomenon. By William D. Mangam. 257 pp., $2.50. Silver Bow Press, New York, 1941.

This volume describes the amazing rise from poverty to one of the greatest fortunes ever accumulated in this country by a man with little preparatory education, possessed of much cunning and skill in promotion of his personal interests. Acquisition of Montana mines of immense value gave William A. Clark the means for accomplishing his personal ambitions. The scandal attending his election to the United States Senate a generation ago excited the attention of the whole nation, illustrating the possibility of attaining endless ambition through bribery and cajolery. Without the backing of enormous wealth no member of this family would ever have attained distinction.

Particular medical interest centers about William A. Clark, Jr., a notorious homosexual pervert, who maintained sinks of iniquity in Los Angeles and Paris, which were condoned by reason of expenditure of huge sums on art and charities. As organizer of Los Angeles Philharmonic Orchestra and chiefly responsible for its maintenance during his lifetime, together with great expenditures for philanthropic institutions, he acquired tolerance in spite of sordid vices and corruption of youth. After death his body lay in state at Butte and Los Angeles. This volume is an amazing description of degenerate life in its many aspects, rendered possible by possession and lavish distribution of huge wealth.

Physicians Reference Book of Emergency Medical Service, A Compilation Chiefly from Medical Literature, Presenting the Practical Experience and Lessons Acquired in Handling Civilian War Casualties. 268 pp. E. R. Squibb and Sons, New York, 1942.

This book is designed to acquaint physicians and surgeons in the United States with "professional literature not readily available here regarding medical and surgical problems arising from the impact of modern warfare on the civilian population." This does not present original material but is a compilation chiefly from British sources, supplemented by American publications of recent literature on management of casualties with treatment of shock, burns, wounds and fractures, with prevention and treatment of wound infections.

The three sections of the book include: Protection of Hospitals, Protection of Civilian Health; Organization of Hospital Service, Relation to First Aid; Reception of Casualties; Management of Casualties, such as Shock, Burns, Wounds and Fractures, Wound Infection, Blast, Crush and War Gas Injuries. All of these subjects are treated in detail with ample specifications for each. Much of the material in this book is unavailable elsewhere and will be of convenient reference in case of bombing attack.

The edition of this book is limited. It will be distributed without charge to emergency medical service officers and other physicians who make requests for it.

Internal Medicine In Old Age. By Albert Mueller-Deham, M.D., Assoicate Visiting Physician, Welfare Hospital for Chronic Disease (Second Division), Department of Hospitals, New York City, etc. and S. Milton Rabson, M.D. Assistant Professor of Pathology, New York Post-Graduate Medical School, Columbia University, etc. 396 pp, $5. The Williams & Wilkins Company, Baltimore, 1942.

This volume represents the experiences of the authors during many years of treatment of chronic diseases in Vienna before settling in New York City. The contents of this volume are limited to internal medicine of old age, without dealing with general medicine. After general considerations, chapters are devoted to diseases of respiratory, cardiovascular, urogenital and digestive systems, together with metabolic disorders and the musculoskeletal system. Special aspects of these diseases in advanced age are discussed, primary emphasis, however, being laid on diagnosis. Old people constitute a significant portion of the population. It is well known that more people than hitherto survive at the present time to old age, and consequently they form a prominent feature for the general practitioner. This book offers useful suggestions for treatment of diseases in advanced years of life.

Pathology of the Oral Cavity By Lester Richard Cahn, D.D.S., Assistant Professor of Dentistry (Oral, Pathology), Columbia University, etc. 240 pp., $5.50. The Williams & Wilkins Co., Baltimore, 1941.

In this short volume the author has successfully covered the subject of pathology of the oral cavity in an excellent manner. The most commonly met conditions have been presented in a concise, condensed form and are accompanied by good illustrations of the gross and microscopic pathology. Nonessential detail description has been omitted, making for easy reading. Dentists and physicians should benefit from owning and reading this volume.

E. O. Schreiner.

NORTHWEST MEDICINE

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Reprints will be furnished by the printer according to the schedule of prices which accompanies the galley proofs submitted to the author. The order for reprints should accompany the returned galley proofs. The printer holds the type until the first of the following month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

OUR DOCTORS IN WAR SERVICE

The most distinguished members of the medical profession at the present time are those engaged in army and navy service, aiding in the defense and maintenance of our nation. No honor is too great to confer upon these members of the medical profession. Not until one is actually engaged in this self-sacrificing work can he appreciate the magnitude and extent of the service which he is contributing. Disruption of medical practice, with abandonment of ordinary mode of life, produces the greatest possible changes in existence. Yet these sacrifices are absolutely essential at this time, and any doctor capable of making this contribution to the welfare of the country feels it an honor to be able to serve in this capacity.

Herewith are presented the names of the physicians of Oregon, Washington and Idaho who are enrolled in army and navy service as of July. In future issues of this journal from time to time will be published the names of other doctors who will be distinguished in the same manner. No attempt is made to give addresses, since unannounced changes would vitiate such efforts.

OREGON

ARMY

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Adams, J. M., Klamath Falls.
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Anderson, E. M., Portland.
Atkins, C. B., Portland.
Bain, L. M., Albany.
Baum, W. W., Salem.
Begg, R. E., Portland.
Belknap, H. D., Portland.
Bennet, W., Portland.
Berg, R. F., Portland.
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Carter, R. R., Portland.
Cash, G. C., Burns.
Chandler, W. J., Woodburn.
Chapman, W. H., Eugene.
Chauncey, L. R., Portland.
Clisby, K. M., Portland.
Collie, W. J., Portland.
Compton, A. M., Portland.
Cottrell, G. W., Portland.
Currin, H. B., Klamath Falls.
Cronin, J. N., Klamath Falls.
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Dehne, J. E., Coquille.
Diack, A. W., Portland.
Dubois, E. D., Portland.
Dowsett, J. W., Portland.
Durham, M. W., La Grande.
Ebner, C. J., Mount Angel.
Edelson, Z. C., Nyssa.
Espersen, R.W., Klamath Falls.
Evans, J. W., Portland.
Everett, E. G., Ashland.
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Fisher, A. A., Lebanon.
Fixott, R. S., Portland.
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Haslinger, J. F., Portland.
Haun, J. J. D., La Grande.
Haworth, J. B., Portland.
Hedlund, C. J., Baker.
Heldobler, A. O., Portland.
Hemingway, M. W., Bend.
Henton, G. H., Portland.
Himmelfarb, M., Portland.
Hoffman, S. J., Eugene.
Illge, A. H., Portland.
Inderlied, H. F., Portland.
Johnson, G. H., Portland.
Kaufman, R. H., Portland.
Kerby, K. E., Nyssa.
Kerron, S. M., Eugene.
Kessler, R. L., Pendleton.
Kimberley, A. G., Portland.
Kuykendall, J., Eugene.
Kuhn, C. W., Portland.
Lee, G. F., Union.
Lewis, H. D., Hood River.
Lind, L. P., Portland.
Littlehales, C. E., Portland.
Lloyd, R. W., Portland.
Lowell, L. M., Astoria.
MacDougall, W. H., Oswego.
Marbut, W. N., Echo.
Mason, H. E., Beaverton.
Mathews, T. J., Oregon City.
McConnell, J., Seaside.
McDonald, D. C., Portland.
McKelvey, G. J., Portland.
McKim. C. P., Baker.
McMahon, R. A., Portland.
Menkel, C. B., Sheridan.
Miller, E. C., Salem.
Miller, J. L., Jr., Portland.
Miller, R. F., Portland.
Miller, V. W., Salem.
Mills, V. D., Portland.
Mount, F. R., Portland.
Munroe, W. R., Portland.
Nielsen, W. E., Portland.
Nichol, B. A., Portland.
Nerseth, M., Klamath Falls.
Packard, F. B., Portland.
Parcher, R. W., Portland.
Parks, E. W., Portland.
Pease, B. N., Portland.

Perlman, F., Portland.
Phillips, O. S., Bend.
Piercy, W. H., Hilsboro.
Pollock, R. W., Halfway.
Power, F. K., Salem.
Rafferty, F. W., Astoria.
Rademacher, S. J., Bend.
*Rankin, J. S., Portland.
Rawls, N. B., Portland.
Ray, L. F., Portland.
Reed, R. J., Portland.
Rich, D. R., La Grande.
Riedel, H. F., Portland.
Ritteman, G. W., Salem.
Robbins, C. W., Eugene.
Roberts, J. M., Portland.
Rogers, A. L., Junction City.
Robinson, E. G., Portland.
Rogers, A. L., Portland.
Rogers, R. S., Junction City.
Ross, W. K., La Grande.
Ross, W. T., McMinnville.
Russell, J. P., Grants Pass.
Ruuska, P. E., Portland.
Saunders, G. C., Portland.
Scales, K. J., Portland.
Schneider, L., Portland.
Seabrook, D. B., Portland.
Searing, D. H., Monmouth.
Sharp, P. W., Klamath Falls.
Shields, A. B., Portland.
Short, F. A., Portland.
Shuey, H. E., Cottage Grove.
Sleeter, R. W., Medford.
Slocum, D. B., Eugene.
Smith, C. H., Portland.
Smith, G. K., Portland.
Snow, E. W., Portland.
Sneeden, V. D., Portland.
South, F. F., Portland.
Stanard, D. C., Eugene.
Steward, J. B., Portland.
Strohm, J. G., Portland.
Suckow, G. R., Portland.
Sullivan, A. W., Portland.
Sundquist, E. L., Springfield.
Ten Eyck, T. G., Portland.
Trommald, J. P., Portland.
Tuhy, J. E., Portland.
Tupker, E. P., Salem.
Underwood, F. J., Portland.
Vogt, P. R., The Dalles.
Wall, E. C., Prineville.
Wells, H. A., Redmond.
White, J. B., Portland.
Wilbur, W. I., Carlton.
Woolcott, F. L., Jr., Portland.
Yost, C. W., Portland.
Zener, F. B., Portland.

NAVY

Adix, H. V., Jr., Portland.
Alvis, H. J., McMinnville.
Bailey, B. G., Grants Pass.
Berger, E. H., Portland.
Bueermann, W. H., Portland.
Chettham, J. G., Portland.
Enkelis, J. J., Portland.
Enos, R. W., Portland.
Gevurtz, W. S., The Dalles.
Haworth, W., Portland.
Hockett, V. E., Salem.
Holcomb, R., Portland.
Hutchens, W. H., Portland.
Johnson, A. N., Roseburg.

Johnsrud, R. L., Portland.
Jones, L. T., Portland.
Kabeisman, F. J., Hillsboro.
Landers, E. L., Joseph.
Lipshutz, J., Portland.
Nitschke, E. L., Portland.
Owen, E. P., Portland.
Payne, DeWalt, The Dalles.
Robertson, C. G., Salem.
Sisson, M. A., Portland.
Spangler, P. E., Portland.
Sweet, W. J., Portland.
Thomas, R. L., Portland.
Zeller, W. E., Portland.

WASHINGTON

Names of Washington State physicians listed here are only those who are members of Washington State Medical Association and are commissioned either in the Army or Navy as of July 25. There are many more physicians in the service not members of organized medicine and still many more not listed here who have applied for commissions but have not yet received them. In fairness to the medical profession, the list published herewith is, therefore, incomplete.

ARMY

Ackerman, F. F., Seattle.
Adams, J. G., Enumclaw.
Altose, A. R., Seattle.
Altman, M. E., Sedro Woolley.
Anderson, E. R., Tacoma.
Andrews, H. H., Sumner.
Anderson, O. W., Seattle.
Aronson, S. F., Seattle.
Backman, V. G., Pasco.
Baer, E. J., Seattle.
Bajema, S. C., Lynden.
Barner, H. A., Bremerton.
Baugh, F. W., Burlington.
Beck, H. G., Fort Lewis.
Benson, C. E., Bremerton.
Benson, R. A., Bremerton.
Billington, S. M., Seattle.
Blackman, J. F., Seattle.
Bowers, J. M., Seattle.
Bourns, T. L., Seattle.
Brown, W. S., Seattle.
Bryant, M. E., Colfax.
Buckner, H. T., Seattle.
Burk, C. E., Roslyn.
Burns, F. J., Spokane.
Burns, J. K., Spokane.
Butts, W. S., Spokane.
Calhoun, E. L., Hoquiam.
Cameron, Walter C., Tacoma.
Campbell, M. M., Seattle.
Carnahan, H. D., Spokane.
Carney, J. L., Seattle.
Carter, R. P., Seattle.
Case, E. F., Seattle.
Clark, R. E., Spokane.
Cole, W. S., Ellensburg.
Collins, J. D., Seattle.
Cooley, P. P., Monroe.
Conners, T. P., Tonasket.
Corlett, Donald, Seattle.
Corkery, J. R., Jr., Spokane.
Cunningham, J. E., Spokane.
Darrough, J. W., Everett.
Davidson, W. M., Seattle.
Dennen, Charles, Seattle.
Deppe, E. F., Seattle.
Dewey, L. A., Seattle.
Dodds, G. A., Seattle.
Dorland, E. G., Seattle.
Drewelow, K. R., Kirkland.
Ebeling, Walter, Mt. Vernon.
Fairbourn, E. J., Tacoma.
Fey, L. D., Seattle.
Firestone, Charles, Seattle.
Fletcher, R. H., Seattle.
Flynn, J. R., Tacoma.
Franz, F. W., Seattle.
Forman, B. B., Shelton.
Foster, R. F., Seattle.
Friend, L. R., Bothell.
Gilbert, H. A., Mt. Vernon.
Ginn, W. S., Yakima.
Givens, J. H., Seattle.

Glovatsky, W. J., Seattle.
Goering, W. H., Tacoma.
Gould, L. M., Seattle.
Greene, Philip, Spokane.
Guyer, E. C., Seattle.
Halvorsen, Clifford, Tacoma.
Ham, Lyle, Vancouver.
Harmon, M. S., Montesano.
Hartzell, H. V., Seattle.
Haven, Hale, Seattle.
Haverstock, R. T., Seattle.
Hearne, R. B., Seattle.
Helwig, C. M., Seattle.
Henry, R. T., Colfax.
Hopke, H. L., Sedro Woolley.
Houk, T. W., Seattle.
Hunt, W. D., Seattle.
Hunter, Maxwell, Olympia.
Isaac, R. W., Pomeroy.
Joers, L. E. C., Tacoma.
Johnson, G. H., Vancouver.
Johnson, W. B., Everett.
Jones, S. S., Tacoma.
Kahn, B. T., Spokane.
Kalez, W. M., Spokane.
Karel, Jack R., Seattle.
Kaveney, I. E., Port Angeles.
Keim, S. A., Wenatchee.
Kellogg, H. B., Seattle.
Keyes, R. P., Bellingham.
King, H. G., Seattle.
King, W. V., Burlington.
Kingston, G. R., Wenatchee.
Kling, G. W., Centralia.
Kohl, G. C., Sumner.
Kraabel, A. B., Seattle.
Kretzler, H. H., Edmonds.
Kroger, O. C., Centralia.
Lantiere, S. R., Enumclaw.
Larson, C. P., Tacoma.
Leavitt, D. G., Seattle.
Lemere, Fred, Seattle.
Levinson, Sol., Seattle.
Lewis, E. J., Waitsburg.
Lewis, W. E., Tacoma.
Lightburne, W. J., Spokane.
Lillibridge, H. D., Olympia.
Loree, D. R., Vancouver.
Low, L. H., Yakima.
Martin, J. K., Seattle.
Mattison, L. M., Seattle.
McClure, R. D., Yakima.
McConville, B. E., Seattle.
McDowell, J. W., Seattle.
McVay, J. P., Seattle.
Meade, Thomas, Goldendale.
Meeske, F. L., Spokane.
Meeske, J. M., Snohomish.
Miller, R. R., Seattle.
Miligan, B. W., Tacoma.
Milligan, John O., Seattle.
Millington, W. A., Seattle.
Minkove, S. J., Seattle.

Moore, T. I., Spokane.
Morgan, W. M., Seattle.
Munger, I. C., Vancouver.
Narodick, P. H., Seattle.
Neighbor, J. W., Mason City.
Nelson, J. A., Longview.
Newsom, S. J., Walla Walla.
Noonan, C. T., Seattle.
North, C. Q., Seattle.
Nunn, L. L., Vancouver.
O'Brien, R., Spokane.
Olson, O. C., Mason City.
Parmelee, E. C., Seattle.
Parsley, F. E., Seattle.
Peterson, R. C., Seattle.
Plastino, J. B., Spokane.
Pohl, R. H., Spokane.
Porter, John, Port Orchard.
Potter, J. E., Bremerton.
Powell, A. C., Seattle.
Proffitt, J. C., Seattle.
Qlerna, M., Spokane.
Qualheim, C. B., Seattle.
Ramsay, J. F., Seattle.
Read, J. W., Tacoma.
Rew, W. B., Yakima.
Rogge, E. A., Seattle.
Rose, H. W., Seattle.
Roys, R. J., Seattle.
Sames, A. A., Tacoma.
Schoolnik, M. L., Seattle.
Scott, Percy T., Seattle.
Seth, R. E., Seattle.
Shaw, Joseph W., Seattle.
Shaw, Merrill, Seattle.
Sherwood, K. K., Seattle.
Shiach, J. M., Seattle.
Shikany, S. E., Spokane.
Skinner, J. W., Seattle.
Smith, A. M., Jr., Bellingham.
Smith, G. S., Spokane.
Speer, M. E., Leavenworth.
Speir, E. B., Seattle.
Standard, J. F., Seattle.
Stewart, R. E., Spokane.
Stone, Caleb S., Seattle.
Southcombe, R. H., Spokane.
Taylor, E. D., Centralia.
Taylor, R. L., Bellingham.
Tennant, R. E., Seattle.
Thompson, R. S., Seattle.
Turley, G. W., Goldendale.
Velonis, G. S., Spokane.
Weisman, P. G., Colfax.
Welsh, C. L., Seattle.
Whitaker, C. W., Tacoma.
Williams, E. H., Seattle.
Wilson, L. M., Olympia.
Zoet, A. G., Lynden.

NAVY

Ash, J. L., Seattle.
Collins, W. W., Sunnyside.
Duncan, John, Seattle.
Goss, C. C., Seattle.
Green, H. J., Seattle.
Haviland, J. W., Seattle.
Hartley, Herbert L., Seattle.
Harris, Milo, Spokane.
Hennings, F. W., Tacoma.
Jensen, C. D. F., Seattle
Jensen, C. R., Seattle.
Leavitt, H. L., Seattle.
LeCocq, Edward, Seattle.
Lower, R. A., Spokane.
Lynch, H. C., Yakima
Maxson, F. T., Seattle.
Morrow, C. L., Seattle.
Macomber, C. W., Pt. Orchard
Ohman, A. C., Seattle.
Shirey, R. W., Yakima.
Voetglin, W. L., Seattle.
Wanamaker, F. H., Seattle.
Watts, C. E., Seattle.
Whitlow, L. W., Seattle.
Willis, Park Weed, Jr., Seattle.

IDAHO

ARMY

Abbott, W. R., Idaho Falls.
Alban, H., Kimberley.
Anderson, V. H., Buhl.
Budge, B., Boise.
Bischoff, G., Boise.
Bovenmyer, E. S., Pocatello.
Brothers, W. W. Pocatello.
Coats, R. M., Weiser.
Creed, J. W., Filer.
Cromwell, J. O., Blackfoot.
Davies, D., Boise.
Douglas, W. S., Lewiston.
Duncan, D. G., Council.
Eisenberg, B. C., Pocatello.
Engelcke, R. H., Boise.
Goodwin, R., Emmett.
Gudmundsen, M., Boise.
Guyatt, H. E., Idaho Falls.
Hancher, H., Weiser.
Hawkins, O. J., McCall.
Hedemark, N. G., Boise.
Holstein, T., Boise.
Krotcher, L. C., Twin Falls.
Marsh, F. S., Culdesac.
McBratney, E. W. Buhl.
McQueen, A. B., Lewiston.
Myers, I., Boise.
Newton, A. M., Pocatello.
Peterson, W., Boise.
Pierce, W. H., Cottonwood.
Privett, L. B., Boise.
Rawlinson, R. P., Emmett.
Rees, E. T., Twin Falls.
Rothman, B. G., Hagerman.
Rulien, W. A., Wendell.
Savin, C. H., Wendell.
Sawyer, M., Twin Falls.
Schow, F. W., Hailey.
Simpson, S. D., Caldwell.
Stone, H. W., Boise.
Stowe, H. L., Twin Falls.
Talbot, R., Wilder.
Tall, A., Rigby.
Terhune, C. A. Burley.
Towner, A. A., Spokane.
Van Dorn, R. W., Couer d'Alene.
Wendle, C. C., Sandpoint.
White, R. L., New Plymouth.
Worlton, J. E., Idaho Falls.

NAVY

Beymer, C. B., Twin Falls.
Chaloupka, H. M., Boise.
Howard, F. H., Shoshone.
Jones, E., Boise.
Mack, Q., Boise.
Shaw, M. B., Boise.
West, I. F., Boise.

ALIEN PHYSICIANS

Refugee physicians were and are a sore spot in medical practice. Two years ago we had too many physicians in practice and the addition of refugee physicians to an already overpopulated medical practice gave considerable alarm. This applied as well to American-born physicians who had received their training abroad and who wished to return to their own country to practice their profession.

Properly qualified physicians are always welcome, and by properly qualified are meant medically, sociologically and personally. The big sticking point was the certification of medical qualifications. Many of the refugees were unable to obtain the proper certificates, others had certificates from medical schools and hospitals which had no established standards in this country and conditions in Europe precluded the possibility of establishing such standards. Standardization of American schools was won after a long and unpleasant battle, and Boards of Medical Examiners have finally become quite uniform in their requirements for graduates of American schools.

When this new and unpredictable problem presented itself, many of our Boards made, as requirement for a license to practice, an additional year in an approved American medical school or hospital. The few hardships were far outweighed by the safety from flooding the profession with undesirables.

Well and good, but now the picture has changed. It is considered that for civilian needs there shall be only one physician for every 1500 population. We have already felt what this means and we all know what is in store for those who remain in civilian practice as far as hours of work and increased responsibility are concerned. Will we, then, let down the bars which were so carefully and thoughtfully built up? Undesirables as well as desirables will be granted licenses to practice medicine and we will be giving up a principle which we have promised to protect with our utmost zeal, that no one will be admitted to the practice of medicine who cannot furnish satisfactory proof of having the high qualifications which feature medical practice in the United States.

From this stand we must not retreat. Those refugee and alien physicians who are capable and willing to meet our requirements should have done so by the indicated procedure for the respective states. These we are glad to welcome, but those who are still hoping to obtain their licenses without fulfilling the requirements are no more welcome in these times of stress than they were two years ago. The civilian population must be protected as well as served and it is our continuing duty to see that whoever is to give civilians medical care must be properly qualified to render that care.

STATE CIVILIAN DEFENSE MEDICAL OFFICIALS

It has been announced that in order to facilitate the emergency medical and hospital program developed by the Medical Division of the Office of Civilian Defense and the U. S. Public Health Service, physicians who are state and deputy state chiefs of Emergency Medical Service have been commissioned in the Public Health Service Reserve, so that they may exercise both state and federal responsibilities. For Oregon, Vernon A. Douglas of Salem has been appointed state chief; for Washington, Arthur E. Lewis of Seattle is deputy state chief.

> "These officers will have as their first duty the stimulation and guidance of local chiefs of Emergency Medical Service in the organization of local casualty receiving hospital and field casualty services. In addition to these functions, they will serve as responsible agents of the States and of the Medical Division of the Office of Civilian Defense and of the Public Health Service for the organization of emergency base hospital facilities and personnel.
>
> "In collaboration with state hospital officers, who are now being appointed in coastal states, the full-time Emergency Medical Service chiefs and deputy chiefs will plan the number, size, location, staff and equipment of Emergency Base Hospitals. Another duty of these officials will be to determine, in collaboration with the local military and the state evacuation authorities, the lines of evacuation and means of transport of civilian casualties and other hospitalized persons from local casualty receiving hospitals to Emergency Base Hospitals."

MEDICAL WORK FOR OLDER PHYSICIANS

Any thoughts of retirement which have been entertained by the older practicing physicians of the United States have had to be revised by events of the past few months. Wishful thoughts of having an assistant or associate from the ranks of the younger men to ease the burden which is growing rather than becoming lighter will reach no further than the wishful stage. The alacrity and thoroughness with which the Procurement Committee has done its work in this section of the country has depleted the ranks of those eligible for filling such positions.

It behooves all in the upper age brackets to follow their own advice as far as keeping fit is concerned. A physician in some parts of the country will soon be called upon to do labors far beyond his usual number of duties. To perform these well it is necessary to know one's own limitations and to economize on endurance in such a way that with the least utilization of it the most people can be served.

Newspapers in each locality are stressing the need for conservation of the doctors who are left, and imploring the population to restrict calls to those which are necessary. Doctors, too, will have to be firm in refusing to waste their time in making unnecessary home calls and insisting on office visits wherever possible. It looks as if the doctors, also, will be forced to issue priority ratings.

CANCELLATION OF ANNUAL MEETINGS

Owing to the large number of its members who will be engaged in war service, and many other engagements of various kinds to occupy time and attention, the Board of Trustees of Washington State Medical Association has cancelled the annual meeting which was scheduled to be held at Spokane August 17-19. There will be a meeting of the House of Delegates in Seattle in September for the purpose of conducting the business of the Association, election of officers and other functions which ordinarily are performed in connection with the annual meeting.

It had been the intention of Oregon State Medical Society to hold its meeting next month as scheduled, and the program was duly prepared for publication in this issue. It was decided, however, to be advisable to cancel the program of papers but to hold a two-day session of House of Delegates which will occur on September 12-13. A portion of the prepared program included addresses arranged by Portland Academy of Medicine. These will be presented independently of the state society meeting. These cancellations are in accordance with experiences of many organizations, whose annual meetings have not been held as usual in consequence of war emergencies. The question of their renewal in coming years will depend entirely upon war events in the near or distant future.

SAVE YOUR BAG FROM THE DRUG ADDICT

During recent months, when restriction has been placed on manufacturing medicinal preparations, the drug addict has had increasing difficulty in obtaining his needed amounts of narcotics. He has developed much ingenuity in attempts to secure his desired supply. One of these is the doctor's medical or surgical bag which generally contains a certain amount of morphine. Once the addict gets this in his possession, he cares for little of its contents except the drugs which it may contain.

Every physician, mindful of the preservation of his possessions, should never leave his car unlocked, although the temptation is often urgent to run into the drug store or elsewhere for a moment, thinking his medical bag or other valuables will be safe, only to find his treasured equipment gone when returning to his car. Agents of the U. S. Narcotics Bureau have been keenly observant of this situation. Its representatives have lain in wait on the street before one of our largest city hospitals, where an addict, quietly waiting in his car, has been on the lookout for attending physicians whose cars have been parked at the curb. Casually walking along the street, he inspects each car in search of the bags left behind by the physicians. Even though the car is locked, he can open the door by a vigorous attack on the handle, smashing the lock and entering the car. This procedure has actually been observed. In recent weeks have appeared newspaper accounts of stolen bags being afterwards recovered, with no loss except the narcotics which they contained.

Representatives of the Narcotics Bureau wish to impress upon physicians the necessity of not only locking their cars, but taking with them their bags even though they are making brief visits. Never leave the car doors unlocked, even if the absence is to be for only a short period. Leave in the car nothing containing morphine or other narcotics. This matter has become of such importance in the cities that emphasis is thus presented to the physicians with urgent request for their cooperation to aid in suppression of drug addiction in this manner, and preservation of their own valuables, even though it may appear of trivial consequence.

CAN SMALLPOX BE ERADICATED?

There was a time when in many parts of the world smallpox was considered an inevitable disease which would with certainty attack a certain proportion of the population. This illusion was eventually dissipated by universal vaccination. As a result, the disease has practically disappeared in some European countries; where cumpolsory vaccination has been rigidly enforced. The United States has been the one great nation, where the disease has continued with varying grades of decrease.

It is reported that an all-time low record was established in 1941[1], with only 1432 cases recorded, less than half the number of the previous year. While the complete mortality has not been available, it is believed there were not over ten deaths from these cases. One fact cannot be viewed with complacency by the people of our three Northwestern states. It is stated that the chief center of smallpox infection in the past twenty years has been Montana, Idaho, Washington and Oregon, the next highest rates coming from adjacent states. In fact, it is asserted that smallpox prevalence decreases as the distance from these Northwestern states increases. An astonishing fact is the prevalence of this disease in Indiana, where during the last twenty years reported cases have been four times the number from New England, the Middle Atlantic states, Delaware and District of Columbia, in spite of the fact that this state's population is less than one-tenth of this area. This disgraceful condition for Indiana is explained by the fact that less than 13 per cent of preschool children, and not more than 53 per cent of school children under ten years of age had been vaccinated.

This sharp decline of reported cases in the last two years may be only temporary, owing to the fact that people may consider smallpox has become a disease of the past, and a new generation of unvaccinated children may appear through indifference or neglect. With proper precaution by general vaccination it is believed that smallpox can be eliminated in this country during the next decade.

In order to bring about this result, however, health propaganda must be unceasing, with insistence that no one is naturally immune to the disease, the only certain means of obtaining immunity is through vaccination, and this is not lifelong but must be renewed by revaccination at intervals of about seven years. A warning note of danger is at the same time presented, owing to the constant shifting of thousands of workers to war industries in urban centers, many of whom may come from unvaccinated areas. This is offered as a warning to health authorities to be constantly alert to the presence of unvaccinated newcomers into their localities. A widespread and vigorous campaign for vaccination should be constantly maintained.

INTEREST IN MEDICAL HISTORY

There is a fascination to every physician from delving into the early medical history of the section in which he is practicing. Information must be obtained, to a large extent, from older physicians, whose experiences may cover a varying length of past years. Attention is called to the article in this issue on "Development of Psychiatry in the Pacific Northwest" by Stewart and Dickel. Many readers are familiar with some of the facts described. Taken as a whole, it will interest every physician in the Pacific Northwest and will be found worthwhile their perusing.

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[1] Smallpox at its Lowest Ebb in 1941. Statistical Bulletin, Metropolitan Life Insurance Co., Vol. 23, June, 1942.

ORIGINAL ARTICLES

IRRADIATION IN TREATMENT OF MALIGNANT TUMORS*

George W. Holmes, M.D.**
BOSTON, MASS.

The successful treatment of malignant tumors by irradiation depends, as it does in their treatment by surgical means, upon early, accurate diagnosis and the proper selection of cases. The radiologist, like the surgeon, must be a master of technical procedure and of the tools with which he works. Far too often the life of the patient is endangered (for cancer untreated is a fatal disease) by failure of the physician who first sees the patient to make a correct diagnosis and to refer the patient for immediate treatment; by the consultant who selects the wrong therapeutic procedure or carries it out improperly; or by failure of those responsible for management of the case to work together as a team.

Cancer in its broadest sense is a disease which may involve any part of the body at any age, and its diagnosis and treatment concern all fields of medicine and dentistry. It is far too large a field to be mastered by any one man. In its early stages, before metastasis has taken place, it is curable in a high percentage of cases, if the proper procedures are instituted promptly. Our responsibility as physicians to these patients is therefore very great.

Of the various attempts which have been made to improve the diagnosis and treatment of cancer the establishment of tumor clinics in our large general hospitals has been, in my opinion, the greatest single advance. Although less spectacular than the advances made in cancer research, it has increased the number of cures and improved the management of the incurable patient. It has resulted also in a better understanding between the radiologist and the surgeon, and has served as a center of education for the physicians of the community. The Tumor Clinic should form, I believe, an important part of the activities of every large general hospital.

In the treatment of malignant tumors, complete surgical removal is still the method of choice in those cases, where complete surgical removal is possible and the operative risk is not too great. It is the method to be used in the great majority of curable patients. Irradiation offers an excellent chance of cure in those cases in which the operative risk is too great, or in which the anatomic location of the tumor makes complete surgical removal impossible. It is also the method of choice in nearly all cases in which cure is impossible and palliation only should be attempted.

With these general statements in mind let us consider some of the more important factors which have to do with the radiation treatment of malignant tumors. The sources of irradiation at present available may be summarized as follows: radium element usually in the form of needles of varying strength; radium emanation either in the form of needles or seeds; low voltage roentgen rays; high voltage roentgen rays and super voltage roentgen rays. Low voltage roentgen ray is that irradiation produced at a maximum voltage of 150 KV; high voltage roentgen ray is that irradiation produced at a maximum of 200 KV; irradiation produced at voltages above 200KV is spoken of as supervoltage roentgen ray and may reach a maximum of 1000 KV. With each voltage used there is an optimum filter thickness and an average wave-length of the irradiation produced.

The selection of the source of irradiation depends largely upon two factors: the convenience of application and the depth and size of the tumor mass to be treated. So far as is known at the present time, there is no definite difference in the biologic effect produced by the various wave-lengths of irradiation in use. The sterilizing effect on tumor tissue depends upon the total amount of irradiation which it receives and the time factor. It is obvious that tumors arising within body cavities may be given a larger dosage with radium locally applied than with external irradiation of any form, and with less injury to surrounding normal tissue. It is equally obvious that a tumor mass situated 10 cm. below the surface should not be treated by low voltage or long wave-length irradiation which will be entirely or largely absorbed in the first 5 cm. of tissue. Heavily filtered high voltage roentgen rays or filtered radium placed at long distances from the tumor tends to produce an even distribution of the irradiation throughout the tumor mass. Low voltage roentgen rays and lightly filtered radium, when applied directly to the tumor, produce intense irradiation close to the source which diminishes rapidly in distant parts of the tumor. The interval in time between exposures influences both the sterilizing effect and the healing of the lesion. These effects are still but poorly understood.

From this brief summary it can be seen that the proper selection and application of the type of irradiation plays an important part in the successful treatment of malignant tumors. It is only within recent years that these factors have been fully appreciated, particularly the importance of proper intervals for the giving of treatments, usually called the "time factor."

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**From the Department of Radiology, Massachusetts General Hospital, Boston, Massachusetts.

BIOLOGIC EFFECTS AND RADIOSENSITIVITY

The exact biologic effect of irradiation on living tissue is not well known. It is known that the effect is different on tumor tissue and on the tumor bed. Some knowledge has been gained regarding intracellular damage and the chemical changes following irradiation. Microscopic changes are also demonstrable in irradiated tissue. These consist of nuclear alteration, and changes in the protoplasm and in the size of the cell. Clinically in very sensitive tumors there may be some swelling of the mass immediately following irradiation. After a varying interval of time the tumor may shrink or disappear completely. On the tumor bed the effect is largely on the blood vessels and connective tissue. Clinically, these changes are usually seen as late effects, such as edema, fibrosis or necrosis.

In general, it may be stated that the effect of irradiation on normal tissue is that of premature aging. The tissues have many of the characteristics of extreme senility. The sensitivity of any tissue varies from time to time. Normal tissues are more sensitive in the young than in the aged. Rapid-growing tissue with a good blood supply is more sensitive than slow-growing tissues with a poor blood supply. Probably the most important factors governing radiosensitivity are the embryonal origin and histologic structure of the tissues to which the irradiation is applied. The white blood cells, the blood-forming organs, the gonads and tissues of embryonic type are particularly sensitive. Tumors which originate from these types of tissues are characteristically sensitive. On the other hand, tumors arising from the nerve tissue, bone or muscle are characteristically resistant. There are all stages between these two extremes, with many individual variations which can only be determined by a therapeutic test.

The successful treatment of a tumor by irradiation should not be confused with its sensitivity. Some very resistant tumors are successfully treated when their location is such that large doses can be given without irreparable damage to the surrounding tissues, or when they are very small or pedunculated. Recently transplanted tumors are said to be more sensitive than well established growths. Some tumors can be destroyed by single massive doses, others respond better to prolonged irradiation with fractional doses. This seems to depend upon whether the beneficial effects are due to destruction of the tumor itself, or are brought about by changes in the tumor bed. At the present time there is no conclusive evidence available that irradiation is capable of stimulating the growth of any tissue or that malignant cells grow faster in previously irradiated tissue. It is true that excessive amounts of connective tissues are found in areas previously irradiated, but this is the natural response of tissue to injury of any kind.

RADIATION TECHNIC

The factors necessary for a satisfactory technic are: a thorough knowledge of the apparatus used; a knowledge of the biologic effects and the sensitivity of tissue both normal and pathologic; the pathology and natural history of the various types of tumors treated, and clinical experience. The source and kind of irradiation, as has already been suggested, should be selected according to the size and location of the tumor. Large irregular surfaces are difficult to treat with radium plaques or needles, and are better handled with roentgen rays or the radium bomb. Moderately filtered irradiation, given from a considerable distance, permits of an even distribution of the irradiation throughout the tumor mass. The filters used should be proportioned to the size and depth of the mass to be irradiated. Tumors which are completely surrounded by normal tissue, or which lie at a considerable distance from the surface, or are located near vital organs are rarely curable by any form of irradiation unless they are extremely sensitive.

If irradiation is selected as the method of choice, high voltage roentgen rays, heavily filtered, and long target skin distances are generally used. Interstitial irradiation has not given the results which at one time were expected. If the tumor is accessible through a body opening, as for instance, carcinoma of the uterine cervix, local application of radium supplemented by external irradiation from high voltage roentgen rays has given excellent results and this method has largely replaced surgery in this group of cases. Attempts to apply a similar technic in such organs as the esophagus and bronchi have been disappointing.

The combined application of radium and roentgen rays has a limited field of usefulness. The use of radium alone, particularly interstitial irradiation, has been largely abandoned in favor of external irradiation with high voltage roentgen rays or the radium pack. If the lesion to be treated is surrounded for a considerable distance by muscles or fibrous tissue, if no vital organs are involved and infection can be avoided, this form of treatment may be used. The objections to interstitial irradiation are the intense local reaction, the uneven distribution of the irradiation, and the danger of infection with spread of the disease. The method is of value in small compact lesions, which cannot be reached readily by external irradiation without injuring the underlying tissues.

COMBINED SURGICAL AND RADIOLOGIC PROCEDURES

Although an enormous amount of work has been done in this field, there is still considerable difference of opinion as to the advisability of the procedure. In general, it has been attempted in three ways: irradiation preceding operation to reduce the size of the tumor, and to make metastasis less likely; postoperative irradiation to destroy any malignant tissue remaining after the operation; and operations to facilitate the application of irradiation. Of these, preoperative irradiation is perhaps the most logical and has been used the least, largely because it delays operation. It should be stated in the beginning that preoperative irradiation will not make an inoperable tumor operable, with the possible exception of some very large radiosensitive tumors which cannot be removed because of their size. Preoperative irradiation, if properly given, does not increase the hazards of operation; it does raise slightly the danger of infection and prolongs the time of healing. Since the most malignant and rapidly growing parts of the tumor are more sensitive to irradiation, even relatively small doses given preoperatively should reduce to some extent the dangers of implantation or subsequent growth of cells scattered during operation.

It is well known that complete destruction of large malignant radiosensitive tumors by irradiation alone is impossible, and the temptation is great to remove the residual tumor in cases which have responded well to irradiation. Such attempts, particularly in carcinoma of the breast, have usually resulted in rapid recurrence and spread of the disease. Preoperative irradiation, therefore, should be confined to those tumors which are localized and are of a high grade of malignancy.

Postoperative irradiation should be attempted only where it is known that the tumor was of a high grade malignancy or where surgical removal was incomplete. If a correct preoperative evaluation of the extent of the disease were always possible, this latter group would not appear and they must be considered as errors in preoperative diagnosis which we attempt to rectify by postoperative irradiation. In the routine case it is probably better to keep the patient under observation, and to employ irradiation treatment only when recurrence has developed.

An exception to this general statement should be made, when the lesion is small and of high grade malignancy. In these cases irradiation of the tumor bed immediately after operation is advisable. When the operative field is large, as in operations on the breast, it is impossible to give a sterilizing dose to the whole field without producing severe permanent injury to normal tissue, and it should not be attempted unless there is definite evidence that malignant disease is present. Perhaps the strongest argument against this combined form of treatment is the false feeling of security which it gives the surgeon, encouraging him to operate on cases on which surgery should not be attempted.

OPERATIONS TO FACILITATE THE APPLICATION OF IRRADIATION

Such procedures have been used in the treatment of tumors of the brain and of the abdominal viscera. They have also been used in the treatment of lymph node metastases, but there is still considerable difference of opinion regarding the value of this method. With the exception of lymph node metastases, where insertion of radium seeds is generally used, the irradiation has been given in the form of a single massive dose of external irradiation which necessarily limits the procedure to rather small radiosensitive tumors. Up to the present time no permanent cure by the method has been reported, although theoretically it should be of value in selected cases. The objections to the procedure are: it prolongs the operation, and there may be rapid breaking down of tissue resulting in serious complications.

Broadly speaking, the opinion seems to be gaining that the first procedure in a given case should be a consultation between the surgeon and the radiation therapist. At this time it should be decided whether the patient should be treated by surgery or irradiation, and if irradiation is chosen, whether roentgen ray or radium should be used. There is very little, if any, advantage in combining any of the methods with the exception of the combined treatment with roentgen ray and radium in carcinoma of the uterine cervix.

RADIATION TREATMENT

Cases suitable for irradiation may be divided into two groups: first, those in which the treatment is given with the hope of cure; and, second, those in which the treatment is palliative. It is of importance that the radiation therapist recognize this grouping. He should not attempt a cure in an incurable patient; this only results in additional suffering. On the other hand, he should not fail to attempt a cure where cure is possible. Frequently this cannot be decided until the treatment has been under way for some time, and the response of the patient to treatment has been determined.

In the first group are those cases in which the tumor is known to be radiosensitive, but its location prohibits surgical removal, or in which the end-results from surgery show a low percentage of cures or a high mortality. Excellent examples of this group are the tumors of the nasopharynx, base of the tongue and larynx. Other cases which may be included in this group are those in which the tumor is superficially located but where surgical removal would result in excessive scarring or when an anesthetic is contraindicated. When treating in an attempt to cure, the irradiated field should be large enough to include the tumor and a considerable area of surrounding tissue; the dose to the tumor itself must be large enough to destroy it completely. The effective dose varies considerably with different types of tumor, but it is in the magnitude of from 3000 r or 5000 r units measured in the tumor. It should be recognized that with such dosage permanent injury to surrounding normal tissue will occur and that heavily irradiated tissue is susceptible to infection and necrosis. Preparation of the patient for treatment is important. Any source of infection should be removed if possible. Operative wounds should be given an opportunity to heal and attention paid to the patient's general health. Following the treatment, trauma to the treated area should be avoided and any possibility of infection eliminated.

By far the greater number of patients referred for radiation treatment are incurable, and the treatment is of necessity palliative. In these cases, the aims of the radiation therapist should be to make the patient more comfortable, to relieve pain, to prevent the breaking down of superficial tumors, and to prolong the patient's life when possible. Any procedure which will increase discomfort and pain is contraindicated. The relief of pain from carcinomatous metastases in the spine and pelvis is a fairly simple procedure and is usually accomplished with relatively small doses. Nodules appearing in the skin can usually be controlled with a single massive dose if the area is small; if large, divided doses must be used. Systemic reactions should be avoided. The radiation therapist should recognize that stage of the disease when treatment is of no further help to the patient and should then discontinue the treatment. He should take advantage of other methods of relieving pain, such as those offered by the neurosurgeon.

HAZARDS OF IRRADIATION AND HOW THEY CAN BE AVOIDED

The hazards of radiation therapy may be divided into local and general reaction. Under local reactions are changes which take place in the skin and underlying tissues, and injuries which may occur to adjoining organs such as the gastrointestinal tract, liver, adrenal, growing bones and so forth. These local changes are dependent upon the size of the dose and the rate at which it is given. Where a single portal is used, the changes in the skin may be used as a guide to changes which may take place in the deeper structures. With multiple portals and extremely high voltage irradiation, deep structures may be severely damaged without injury to the skin. Because of the effect on growth the dangers are greater in children than in adults.

Where extremely penetrating irradiation is chosen, either the irradiation from radium or supervoltage roentgen rays, particularly if multiple ports of entry are used, it is necessary that the radiation therapist be familiar with the tolerance dose of the various normal tissues of the body involved and be able to calculate the actual dose which these organs will receive in planning treatment. Where maximum doses are desired, as in radioresistant malignant tumors, small daily treatments given over a considerable period of time seem to have a greater effect on the tumor and cause less damage to the surrounding tissue than does the single massive dose. In selected cases the radiation therapist may be justified in giving a dose which he knows will result in irreparable damage to normal tissue. After the malignant tumor has been destroyed, the surgeon may repair the damage done by irradiation. It is probably not wise to resort to this type of irradiation in any case in which the diagnosis has not been established by biopsy.

In treatment of surface reaction all irritants and other applications which tend to raise or greatly lower the temperature of the surface should be avoided. A soothing, cooling wash may be applied in the early stages. If blisters appear, leaving a raw surface, a light dressing with some nonirritating ointment may be applied to protect the surface. If pain is severe, it should be controlled with the proper medication. Should a deep ulceration develop, the treatment is surgical. Two types of systemic reaction to irradiation have been recognized: first, the so-called roentgen sickness; and, second, injuries to the blood-forming organs. Both of these hazards have been considerably overemphasized. It is yet to be proved that localized irradiation ever seriously or permanently injures the blood-forming organs, although generalized irradiation over the whole body is known to do so. It should be remembered that many of the tumors treated by irradiation not infrequently invade these organs, producing changes in the blood which should not be attributed to irradiation effects. Probably this should not be considered as a source of danger in the treatment of malignant tumors.

LOCAL INFECTIONS AND THEIR EFFECT ON IRRADIATED TISSUE

The presence or absence of infection plays an important part in the amount of discomfort which the patient has, following heavy irradiation, and it also effects the end-results. Small doses up to 600 r are said to have a beneficial effect on infected tissue. Doses beyond this amount, doses which cause damage to normal tissue, have the opposite effect. Much of the pain following irradiation, and to a considerable extent the brawny induration, skin atrophy and edema are in part at least due to infection. Tissues which have been heavily irradiated are somewhat devitalized and the blood supply to this area has been injured. Trauma or infection, even years afterward, may result in extensive sloughing. For these reasons any source of infection, particularly if it is not freely draining, should be attended to before the treatment is undertaken, and especial care should be used following the treatment to protect the heavily irradiated areas. Operative procedures on areas which have been heavily irradiated should be undertaken only with the greatest hesitancy and caution. In patients suffering from carcinoma of the mouth careful attention to the teeth, with the extraction of all decayed teeth, should be done before the treatment is undertaken, and only under exceptional conditions should extraction of teeth take place after the treatment has been given, as this procedure not infrequently results in extensive necrosis of the jaw, sometimes with uncontrollable hemorrhage.

In debiliated patients irradiation over the sacrum should be avoided wherever possible, as pressure from lying in bed may cause this tissue to break down and result in bed sores which are extremely difficult to treat. In carcinoma of the bronchi the plugging of a bronchus by the tumor not infrequently leads to extensive infection of the area of lung supplied by that bronchus. Heavy irradiation over the consolidated area may result in a spread of the infection and a definite increase in the severity of the patient's symptoms with possible shortening of life. Treatment given through a small field, directed toward the tumor itself with avoidance of the infected lung, on the other hand, frequently results in the establishment of drainage and a marked improvement in symptoms.

In pelvic carcinoma, where an infection is known to be present, the daily dose should be small, and sufficient time should elapse before heavy treatment is undertaken to allow drainage to be established and the infection to clear up. The importance of infection in irradiated tissue is often underestimated, and we should remember that tissue once heavily irradiated never regains its normal resistance to infection.

The sickness which develops during treatment, the so-called roentgen sickness, was a source of great discomfort to patients in the days of the massive dose. During recent years this has largely disappeared as a result of the better selection of cases and the divided dose technic. We know that haste in doses is unnecessary, and that in most instances roentgen sickness can be avoided. True roentgen sickness is dependent upon the amount of irradiation given at a single sitting, the size of the field used, the part of the body irradiated, and the general condition of the patient. False sickness may be due to psychologic causes. A patient who has had true roentgen sickness will often develop the symptoms from association with the apparatus, odors present in the room and so forth. Although it is desirable to have the treatment room well ventilated, the gases present probably have little to do with the cause of true roentgen sickness.

Prevention is a matter of clinical judgment and cooperation between the patient, the attending physician and the radiation therapist. Starting treatment too soon after a major operation, or attempting to complete the treatment in too short a time in order that the patient may be discharged from the hospital is often the major factor in the development of roentgen sickness. Debilitated patients, patients who have been on an inadequate diet, are poor risks. It is often better to wait until the patient is in a satisfactory condition before beginning treatment. If it is absolutely necessary that the treatment be started at once, the area treated should be reduced to the minimum size and the daily dose should be small. The part of the body irradiated is an important factor. The most sensitive area is the upper half of the abdomen and the sensitiveness diminishes as the field is moved away from this area.

The kind of radiation used is not important. Patients may develop roentgen sickness from any form of radiation, including that from radium and supervoltage roentgen ray. The best treatment of roentgen sickness is to avoid it. If this cannot be done, the treatment should be supportive. Rest and increased elimination are desirable. If the necessity for irradiation is urgent and the sickness cannot be controlled, it may be wise to increase the daily dose, giving the treatment as rapidly as possible. Once the dose is increased beyond tolerance, further increase does not seem to increase the severity of the sickness. In other words, doubling the dose does not necessarily double the severity of the sickness.

The hazards of irradiation as I have outlined them may seem rather formidable. Most of them, however, can be avoided, and it should be remembered that doses capable of producing such injuries are given only in patients suffering from malignant tumors, usually in patients who are beyond the possibility of surgical cure and in whom radical treatment is justified. Such doses are rarely if ever justifiable in nonmalignant conditions or in conditions in which the patient's life is not in jeopardy. When after careful consideration of the patient's condition and the various procedures which may be used to relieve it the radiologist has reason to believe that he holds the only possible chance of cure, he should, like the surgeon, use it to its fullest extent, even though it may result in permanent injury and deformity.

INJURIES TO THE HEART BY BLOWS TO CHEST OFTEN ARE OVERLOOKED

Injury to the heart and adjoining structures caused by blows to the chest or to the distant parts of the body is often overlooked because of the prevailing idea that the chest wall and the cushion effect of the lungs prevent such injury, Louis H. Sigler, M. D., Brooklyn, declares in *The Journal of the American Medical Association* for July 11. He emphasizes the importance of bearing in mind that such injury to the heart may occur in any bodily injury and that such patients should be given frequent heart examinations.

The types of blow or impact that may result in heart injury in man, he says, include (1) direct blow to the chest, especially if applied to the region over the heart or stomach; (2) compression of the chest between two solid objects; (3) sudden extreme increase in the pressure within the abdomen by external violence; (4) lifting of an extremely heavy object or other severe strain thrown on the body.

"It must be stressed that it is not the latent force but the velocity of travel of the force when it strikes the body which produces the injury," Dr. Sigler declares.

Factors which help increase or diminish the effects of the striking force on the heart, he says, include the flexibility and resilience of the chest cage. In youth the chest is much more resilient than in advancing age, hence a striking force is more apt to damage the heart in a young man than in an old person.

The presence of disease of the arteries of the heart in advanced age is a sensitizing factor for the production of heart disturbances, if not actual damage, by comparatively little force.

"Injury to the heart may occur without any subjective or objective manifestations." Dr. Sigler advises. "This is especially true if the injury is not severe. If carefully followed, however, even the mild grades of injury may show manifestations by which the injury can be recognized."

SURGICAL PRINCIPLES INVOLVED IN MANAGEMENT OF CARCINOMA OF THE COLON*

VERNE C. HUNT, M.D.
LOS ANGELES, CALIF.

There is no field in surgery, in which individualization is more important than it is in the surgical management of carcinoma of the colon, individualization not only of the patient but of the surgeon as well. Under certain circumstances a particular surgical procedure may be executed by one surgeon with reasonable safety, while the same procedure in the hands of another surgeon would be extremely hazardous.

Many factors are concerned, not only in operability and curability of carcinoma of the intraperitoneal colon, but in selection of the surgical procedures which may be executed with reasonable safety under variable circumstances and conditions, and in the various situations in which neoplastic disease of the large bowel is encountered. The problems of obstruction, infection, anemia, dehydration, avitaminosis et cetera are often involved in management of lesions of the colon. Curability of carcinoma of the colon is dependent upon the stage of advancement of the lesions at the time of its recognition.

One may hardly discuss the surgical management of carcinoma of the colon without at least brief reference to the problems of diagnosis in the various situations in the large bowel. So far as early symptoms are concerned, they may be spoken of as being generally bizarre and characterized by insidious change of bowel habit or function which, it must be emphasized, is not peculiar to neoplastic disease of the colon. Except in childhood and young adults, any change in bowel function should not be lightly dismissed without sufficient investigation at least to exclude neoplastic disease.

It has been said many times that obstruction may be the first sign or symptom of carcinoma of the colon. I should like to emphasize the fact that obstruction is never an early symptom of this disease. Disturbance of bowel habit, such as increasing constipation or intermittent loose stools, practically always antedates neoplastic obstruction. It should be carried in mind that usually the lesion must progress to complete or almost complete circumferential annularity before obstruction can occur. In other words, complete obstruction is indicative not of early but usually of advanced neoplastic disease, even though it is not necessarily indicative of an inoperable lesion. It is worthy of note that approximately 54 percent of the neoplastic lesions of the intraperitoneal colon occur in the rectosigmoid, sigmoid and descending colon, where many of them may be encountered on digital, bimanual or abdominal palpation and where many of them can be proctoscopically visualized.

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Concerning the sigmoid flexure and other situations in the colon in which carcinoma occurs, the competent roentgenologist has established a high degree of diagnostic accuracy through visualization of irregularities in outline and filling defects in the course of or following the barium enema. When one wishes to appraise the reliability of roentgen examination of the colon, one should remain mindful that some limitations must be placed upon the roentgenologist's interpretation of his findings in the rectosigmoid.

OPERABILITY

In each case there are a number of matters which must be ascertained in order that one may determine intelligently and accurately the operability of the lesion and the probability of its cure. First of all, it is important to determine whether or not the lesion is mobile or fixed, and if fixed and immobile, whether the fixation is due to extrinsic invasion of the lesion or extrinsic inflammatory reaction. Some idea of the mobility of a palpable lesion often may be obtained through physical examination. In other instances the roentgenologist may determine mobility through palpatory manipulation under fluoroscopic control as the filling defect is visualized to him in the course of the barium enema. Fixation of the lesion may be a serious matter and, even though it is demonstrated on physical examination or on fluoroscopic visualization, the nature of that fixation can usually be determined only through abdominal exploration.

It is worthy of note that fixation does not necessarily denote inoperability; that in many instances fixation is the result of inflammatory reaction of protective perforation, and that not infrequently under such circumstances the lesion can be successfully extirpated. On the other hand, when fixation is the result of extrinsic invasion of the growth to retroperitoneal structures, the futility of surgical extirpation has been rather firmly established. It should be emphasized that fixation is a late and not an early manifestation of neoplastic disease of the large bowel, and is one which directs attention to the relationship of early diagnosis, or diagnosis of early disease, to the operability and curability of these lesions.

A second matter which needs to be ascertained in the operability and curability of a malignant lesion of the colon is that of intraperitoneal metastases. In general it may be stated that the operability and prognosis of these lesions depend not only upon the degree of local extension of the disease and mobility of the lesion, but upon the extent of lymphatic metastases, if present, and upon whether or not bloodborne metastases, particularly to the liver, have occurred. Printy, Jamieson and Dodson have shown conclusively that a chain of lymphatics accompanies the blood vessels to the colon and the pattern of the lymphatic system corresponds closely with the vascular pattern composed of the right and middle colic and the inferior mesenteric arteries with their various branches and ramifications.

In the course of an abdominal exploration the matter of lymphatic glandular involvement usually can be accurately ascertained. Regional glandular involvement, when grossly confined to the main lymphatic chain adjacent to the segment of the colon in which the lesion is situated, does not in itself constitute inoperability, if the lesion is mobile and when there are no remote metastases discernible, even though such regional glandular involvement materially reduces the percentage prospect of the curability of the disease. The extensiveness of the glandular involvement is important and certainly a more favorable prognosis may be anticipated, when only one or two nodes are involved than when the entire chain which accompanies the vascular pattern is involved in the lymphatic metastatic extension. In my experience regional glandular involvement in varying degrees has been present in approximately 37 per cent of the cases, in which radical extirpation of the lesion has been accomplished. The incidence of such glandular involvement varied from 18 per cent in the lesions of the right colon to 44 per cent in those of the left intraperitoneal colon.

Results in terms of patients living five years after resection without recurrence are approximately 10 per cent better for lesions of the right half of the colon than for those of the left half. The degree of malignancy of the primary lesion is an important factor in prognosis, and while considerable variation in the degree of malignancy exists in lesions in the right and left half of the colon, it is the relatively high incidence of grade II lesions of Broder's classification and low incidence of regional glandular involvement which account for much of the more favorable prognosis in lesions of the right than in those of the left colon. Rankin has credited the right half of the colon with 57.6 per cent five-year survivals following radical extirpation of operable carcinoma, and the left half with 47.7 per cent. It has become a well established fact that prognosis following radical extirpation of lesions of the colon is best when the growth is situated in the proximal colon and gradually becomes less favorable in each descending segment of the colon from the cecum to and including the rectum.

Inoperability of carcinoma of the intraperitoneal colon is manifested in advanced disease most frequently by invasion of retroperitoneal structures and fixation, metastases to the liver, or generalized metastases to the visceral and parietal peritoneum. In abscence of the clinical manifestations of metastases to the liver, ascites and poor general condition of the patient which preclude operation, operability of an intraperitoneal colonic lesion usually may be determined accurately only through abdominal explorations.

PREOPERATIVE TREATMENT

Experience by this time has proved conclusively that employment of certain measures for a matter of several days preliminary to operation materially enhances the safety of any surgical procedure on the colon. No one today may avoid justifiable censure who hastily undertakes a radical extirpation of a malignant lesion of the colon before adequate preliminary measures have been instituted. Obstruction of the colon at times provides urgency for remedial measures, but never may one hastily resort to radical surgical extirpation of a highly obstructive carcinoma for purposes of relieving the obstruction, if the best interests of the patient are to be served.

Inanition, anemia and not infrequently obstruction of a variable degree are manifested in many patients who harbor a carcinoma of the colon. Not infrequently the inflammatory reaction adjacent to the lesion is responsible for a mild febrile state with its concomitant clinical manifestations. Sometimes the localized infection incident to invasion fixation, but more frequently protective perforation of the lesion, with or without abscess formation, adds the problem of sepsis to be dealt with before any radical extirpation procedure may be employed.

It is of the greatest importance that the colon shall be cleansed as thoroughly as possible of all residue before instituting any type of colonic resection. In its accomplishment in absence of obstruction, several days may be employed to advantage preoperatively; the use of mild laxatives, enemas and a low residue diet. The incidence of obstruction of the colon is greater in the left colon than in the right. Circumferential lesions of the cecum and ascending colon are seldom encountered, while they are common on the left side. It is of interest that they seldom produce obstruction through their own occlusion of the lumen of the colon. Instead, obstruction in the circumferential lesion is nearly always the result of impaction of a dehydrated fecal column against the lesion.

The effectiveness of enemas has been demonstrated frequently in relieving this impaction type of obstruction. Intestinal intubation and decompression through use of the Miller-Abbott tube has been demonstrated repeatedly as effective in relieving left sided colonic obstruction. It should be carried in mind that colonic obstruction may be dealt with with greater deliberation than obstruction of the small intestine. When decompression is not accomplished within a few days by nonsurgical means, indications usually become clear for preliminary cecostomy or colostomy at some distance proximal to the lesion. I should like to repeat that obstruction must be relieved preliminary to radical extirpation of an obstructing carcinoma.

Inanition and dehydration contribute much to the risk of surgical procedures on the colon, and certainly high caloric and vitamin fortification with restoration of body fluids preoperatively are urgently in order before resorting to any surgical procedure of magnitude. The preoperative transfusion of blood, when anemia is prominently manifested, materially enhances the patient's ability to withstand the operation of extensive resection of the colon for carcinoma.

Use of intraperitoneal vaccine preoperatively has been strongly advocated in certain surgical circles. Its value is a debatable question. It is entirely possible that the principles of immunity are brought to bear by such intraperitoneal vaccination. There seems to be no question but what a degree of immunity in vivo is established in many of the cases of carcinoma of the colon, in which a protective perforation has occurred, as is evidenced by the relatively slight postoperative febrile reaction which is observed at times following a radical extirpation of such lesions in the presence of infection. On the other hand, as to whether the intraperitoneal introduction of vaccine forty-eight hours previous to colonic resection provides a degree of immunity remains a matter clouded with considerable doubt. We may be certain that a preoperative introduction of vaccine into the peritoneal cavity does not provide occasion for undue liberties in the execution of the surgical procedures, nor does the use of vaccine compensate for technical error.

SURGICAL PROCEDURES

An important question in the minds of many is that of the type of operation that shall be performed in operable carcinoma of the colon, particularly as to whether the operation shall be performed and completed in one stage or in two or more stages. Those who employ two or more stages in all cases stand on the principle that through multiple stages the maximum degree of safety is provided, irrespective if the site of the lesion. There are some faults to be found in such a policy, but they are of insufficient moment to dwell upon them here. It may be stated, however, that malignant disease in certain situations in the colon and under certain circumstances may be removed successfully with restoration of intestinal continuity in one stage. Obstruction, protective perforation, marked anemia, generally poor condition of the patient and senility, irrespective of the site that the lesion occupies in the colon and in every surgeon's hands, constitute for the most part definite indications for a multiple stage operation. It is worthy of emphasis that, whether resection is performed as a primary or a secondary operation, the resection should include not only the mesentry adjacent to the segment of the colon resected but also as much as possible of that in which the lymphatics accompany the blood vessels in order to insure the widest removal of any possibly involved lymph nodes.

Lesions of the Right Colon. The right colon anatomically lends itself very readily to a one-stage resection and restoration of intestinal continuity, and in patients in good condition and in whom there is an operable mobile lesion of the cecum or ascending colon the one-stage illeocolostomy and resection of the right half of the colon is preferable to the multiple-stage operation. For purposes of wide removal of possibly involved regional lymph nodes resection of the cecum, ascending colon and right third of the transverse colon is required in practically all cases of carcinoma of the cecum, the ascending colon and the hepatic flexure. In a number of instances, where I have encountered a small lesion of the cecum or ascending colon without regional glandular involvement, I have had permanent cure of the cecal lesion following simple resection of the cecum with end-to-end anastomosis of terminal ileum and ascending colon, and cure of the lesion of the ascending colon through segmental resection and end-to-end anastomosis between the ascending and transverse colon.

The two-stage resection of the right colon is of two types. The usual procedure consists of an ileotransverse colostomy as the first stage, with resection of the right colon as the second stage. The procedure of Lahey embraces resection of the colon as the first stage and restoration of intestinal continuity as the second stage.

Malignant Lesions of the Transverse Colon, Splenic Flexure and Descending Colon present problems in anastomotic procedures which have a distinct bearing on the operative risk and mortality rate. Usually they are most successfully operated upon by multiple or graded procedures, in the selection of which there is great variation in the sequence of the various steps as pertains particularly to preliminary cecostomy or colostomy, resection and restoration of intestinal continuity as influenced by many factors. It may be stated that seldom may one employ with maximum safety a one-stage resection and simultaneous restoration of intestinal continuity for lesions in these situations.

Lesions of the Sigmoid, likewise, may seldom if ever be operated upon as a one-stage procedure, wherein the resection is followed immediately by an end-to-end anastomosis in the absence of a previously made cecostomy or colostomy. It is in mobile lesions in this section of the colon that obstructive reaction is employed most advantageously with or without a previously made cecostomy or colostomy. On many occasions in my experience a cecostomy performed simultaneously with the obstructive type of resection for carcinoma of the sigmoid has proved a useful safety vent during the postoperative period, while clamp obstruction of the sigmoid was maintained. The temporary colostomy at the site of an obstructive resection of the sigmoid can be so fashioned that spontaneous closure occurs in approximately 50 per cent of the cases and thus obviates the necessity for subsequent surgical closure.

Lesions of the Rectosigmoid present many problems which are concerned primarily with the difficulties of maintaining or restoring intestinal continuity following resection which must be weighed in each case against the advantages and disadvantages of a permanent colostomy and abdominoperineal resection in either one or two stages. The selection of the procedures which shall be used in lesions in this situation may be influenced by many factors and only through individualization of the patient may the purposes of the surgical procedures be best served.

In bringing this rather cursory discussion to a conclusion, I should like to repeat that many factors are concerned in the successful treatment of carcinoma of the intraperitoneal colon. Through early recognition of the disease operability and curability have been enhanced during recent years, and through employment of important measures and judicious selection of surgical procedures operable carcinoma in most segments of the colon can be removed with a reasonable and legitimate mortality rate.

FRACTURE-DISLOCATIONS OF THE SHOULDER

IMMOBILIZATION PROBLEM CASES

Roger Anderson, M.D.
and
Ernest Burgess, M.D.
Seattle, Wash.

The thickness of any fracture book attests to the belief in the old adage that each fracture at a different level is a problem unto itself. However, through adherence to the principle of control of each fragment by dual transfixions, the problem in most cases can be simplified and standardized, as illustrated by the following case reports.

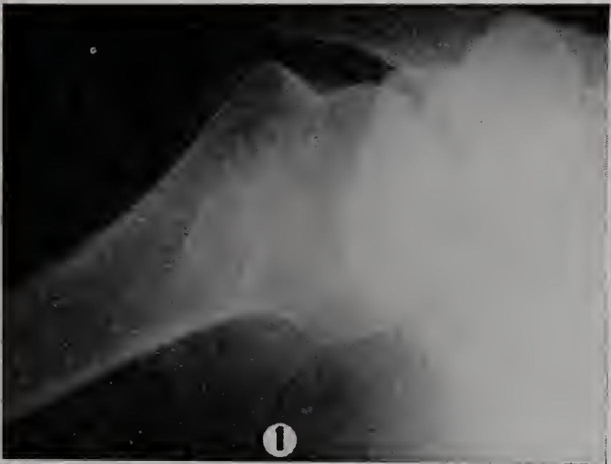


Fig. 1. Illustrates a posterior fracture-dislocation of the shoulder.

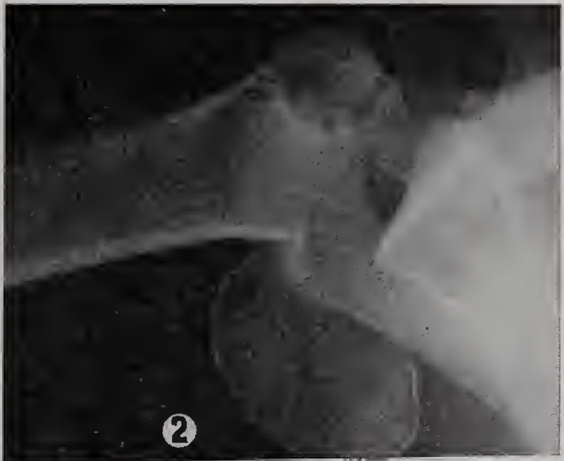


Fig. 2. In the lateral view the amount of dislocation of the head is displayed. Note comminution of the fracture of the greater tuberosity.

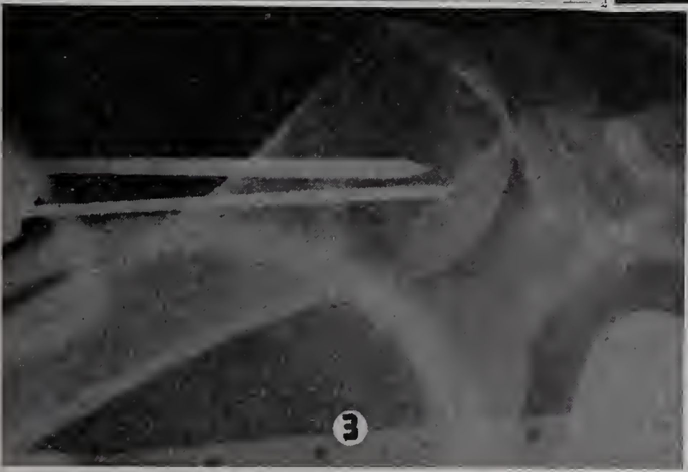


Fig. 3. Head has been replaced by open reduction and held by inserting two Steinmann pins.

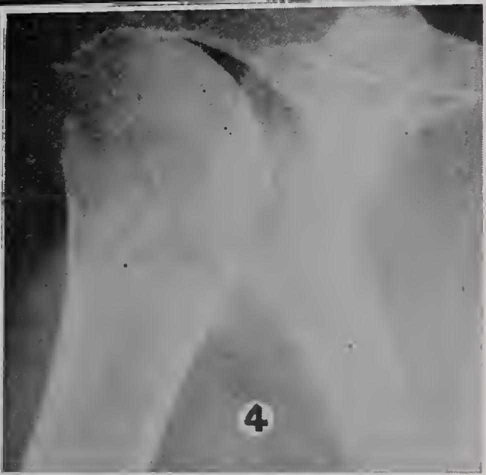


Fig. 4. Result at the end of six weeks.

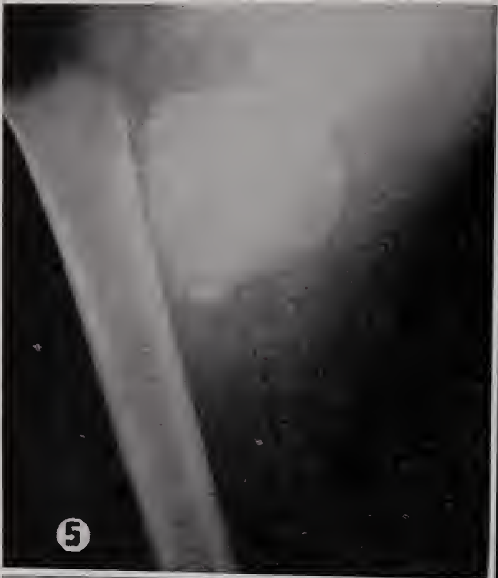
Case 1. Mr. H. M., age 40, was injured in a struggle that followed a convulsion of unknown etiology. On arrival at the hospital he was roentgenographed and the arm manipulated with no improvement of position. Roentgenograms at that time revealed a posterior fracture-dislocation of the shoulder (fig. 1). On being advised to have the upper fragment removed, he came to see us for treatment. Study of the stereoscopic roentgenograms revealed a marked dislocation of the head posteriorly (fig. 2), but there was surprisingly little external evidence of deformity or of pain or dysfunction in the fingers.

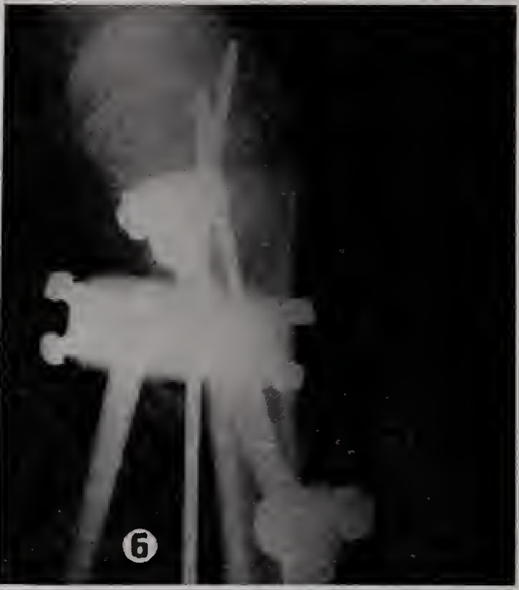
Nine days after the accident, through an anterior incision, the head was found to have completely escaped through a rent in the posterior capsule. On delivering the head, we found there was not a single fibre attached to this major superior fragment. Both greater and lesser tuberosities were severely comminuted and it was necessary to remove most of them. The head was replaced, but because of the location and the plane of the fracture line, we were unable to keep the fragments in position. Therefore, two pins were inserted obliquely into the skin, near the insertion of the deltoid, through the shaft fragment and into the head (fig. 3). Following closure, the arm was placed in an airplane splint. Motions in fingers, wrist and elbow were instituted immediately, and passive motions were started in the shoulder soon thereafter. In a short while the patient was able to move the shoulder actively.

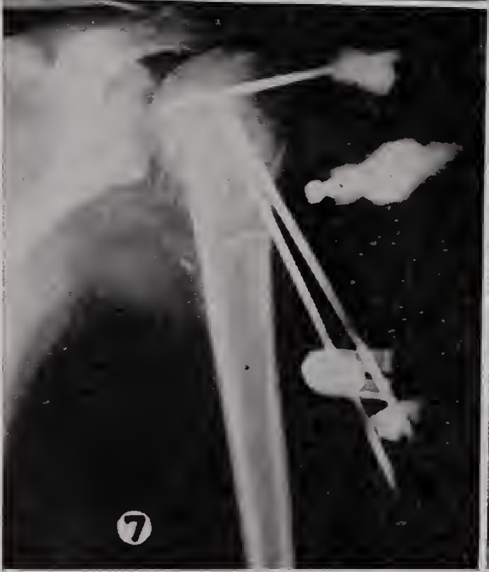
Six weeks after the accident the pins were removed and the fracture appeared to be uniting with no signs of disintegration of the head (fig. 4). Active physical therapy was then started and motion was gradually returning when last seen.

COMMENTS

This patient was a member of the Seattle fire department, and if the head of the humerus had been removed he would possibly have had to be pensioned at the relatively early age of forty. By immobilizing the upper fragment with two transfixions, we were able to control the fracture until bony callus appeared. It was not necessary to apply a spica cast or to keep the shoulder firmly fixed in the airplane splint. The usual methods of treatment ordinarily employed for fracture-dislocations of the shoulder were not applicable in this case. A dual transfixation technic proved a most satisfactory and efficient aid.







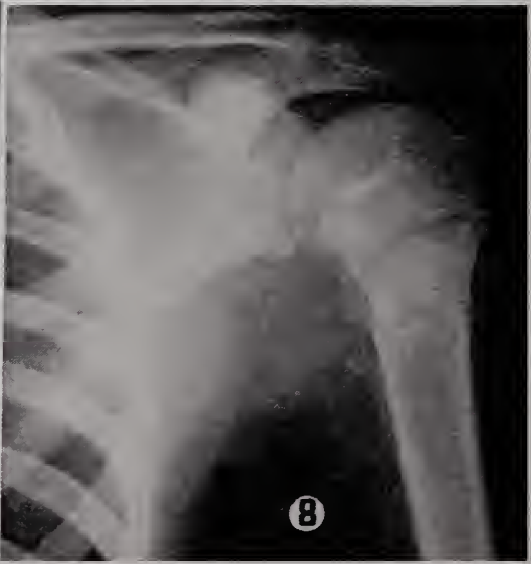


Fig. 5. Fracture through the neck into the epiphysis, two and one-half weeks old.

Fig. 7. To avoid entirely rotary motion, a third pin was inserted from an anteroposterior direction, as illustrated. This type of immobilization gave the patient immediate use of shoulder and elbow.

Fig. 6. The head is so cancellous that it would be impracticable to hold it with screws, so two Steinmann pins were inserted obliquely through the deltoid muscle and shaft fragment into the head.

Fig. 8. End-result four weeks later.

Case 2. Mr. O. S., age 17, who was struck by an automobile and received multiple injuries, including a spiral fracture of the neck of the left humerus. He also had a compound, comminuted fracture of both bones of the right leg. He was placed in a spica cast, and postreduction roentgenograms depicted excellent position. However, subsequent films revealed overriding and angulation. The axillary view in figure 5 reveals the position when he came under our care two and one-half weeks later.

Under anesthetic an attempt was made to manipulate the fracture, but we were unable to disengage it, apparently because of the large amount of green callus present. An anterior incision was made and the fractures reduced. Here, again, because of the location and obliquity of the fracture, and the large amount of green, slippery callus present, we were unable to keep the ends of the fragments approximated.

Fixation was obtained by inserting two pins into the posterior surface of the distal fragment just above the epicondyles (fig. 6). We obtained control of the upper fragment by inserting two pins obliquely through the skin in the region of the deltoid insertion, obliquely through the shaft into the head. Further control was obtained by inserting a pin from the anterior aspect (fig. 7). These upper three transfixions were joined with a dural rod, about the size of a small pencil, and this in turn was fastened to the distal half-pins by a similar rod.

No other form of immobilization was employed. The patient was permitted to move his fingers and wrist immediately, and shortly thereafter to start active and passive motion at the shoulder joint, as previous immobilization had already caused some shoulder stiffness.

The patient was up and around in a wheelchair. Ambulation was not possible, since he could not use crutches for his fractured leg. Callus formed in a surprisingly short time so that the transfixions could be removed at the end of four weeks, at which time there was a good range of shoulder motion (fig. 8).

COMMENTS

A fracture of this location and obliquity is hard to control by the usual methods in a muscular individual. Plating would be difficult, if not impossible, because of the shortness of the superior fragment and the porosity of the bone in this area. A wire would all too frequently pull out, and "continuous" traction would call for prolonged bed-convalescence. Pins, however, will hold even in cancellous bone like the humeral head, provided they are inserted at an angle to each other.

SUMMARY

The adaptability of applying the two fundamental principles of fracture therapy, reduction and immobilization, by means of dual transfixation of each fragment permits a large range of motion at the contiguous joints without disturbance of position. Hospitalization is minimized.

THE PREMATURELY BORN BABY*

SUGGESTIONS FOR ITS CARE

Paul V. Woolley, Jr., M.D.
and
Vera C. Imhoff, R.N.
PORTLAND, ORE.

The medical and economic importance of the prematurely born baby can be appreciated from the knowledge that between 5 and 10 per cent of infants are born at a weight of less than 2500 grams and in this group occur almost 70 per cent of neonatal deaths; prematurity is the largest single cause for mortality during the first year of life. Therefore, it behooves all interested in obstetrics and pediatrics to consider measures aimed at reducing the incidence of premature birth and technics directed to improvement of the outlook for these babies. We especially desire to stress methods applicable to small obstetric units, where large expenditures for equipment and personnel are not feasible.

The causes of prematurity are numerous and in many instances no definite reason can be elicited for the onset of early labor. Among the more important factors can be listed: (1) twinning and other forms of multiple pregnancy; (2) local gynecologic conditions such as hydramnios, uterine fibroids and placenta previa; (3) concurrent disease unrelated to gestation; syphilis, states necessitating abdominal surgery and infections involving any site; (4) systemic diseases peculiar to pregnancy such as the toxemias, hyperemesis and renal complications; (5) operative termination of pregnancy.

Several of these classes of etiology suggest points where work of a prophylactic nature can be of value. Serologic tests early in the course of pregnancy, followed by adequate therapy when indicated, result in a high percentage of syphilitic women reaching term. Preconception examinations may reveal abnormalities correctable at that time and careful prenatal examinations at frequent intervals are of obvious importance. A point emphasized by table 1 applies to the operative termination of pregnancy, where often it is possible to postpone delivery until the child passes into a more favorable weight group and still not jeopardize unduly the mother.

Birthweight	Probable fetal age (in lunar months)	Mortality Per cent
1.0 - 1.5 lb.	6	99
1.5 - 2.0 lb.	7	95
2.0 - 2.5 lb.		85
2.5 - 3.0 lb.	8	60
3.0 - 3.5 lb.		50
3.5 - 4.0 lb.		30
4.0 - 4.5 lb.	9	15
4.5 - 5.0 lb.		Less than 10

Table 1. Gross Mortality Approximations for Various Birthweights: Derived from Collected Sources.

The conduct of premature labor brings to consideration several points directly influencing the prognosis for the baby. Choice of agents for anesthesia and analgesia has commanded considerable attention in recent years and several conclusions can be drawn. Morphine has met with universal condemnation and to its use has been attributed in part the paradoxically high death for infants born by section. Our policy has been to eliminate this drug entirely during the conduct of premature labor and the results appear to justify this ruling.

We are familiar with several instances, where a thoroughly narcotized baby has resulted from the injudicious use of morphine in a futile effort to thwart early labor. Pentobarbital (nembutal) has also come in for a share of adverse criticism and there is little doubt in our minds but what large doses of this drug exert a deleterious effect. Less is known of the inhalation agents but in theory they should be of little danger, if a high level of oxygen can be maintained during their administation.

The outcome of labor is also influenced by the actual type of delivery as can be seen from data collected by Clifford[1] who found a mortality of slightly over 50 per cent for premature babies delivered by breech and by section, 30 per cent for normal vertex, and only 15 per cent when the vertex was terminated with forceps. Comparison between the last two figures is especially significant.

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*Summary Based on the Present Policy and Practices at Doernbecher Hospital and Nursery at Multnomah County Hospital.

[1] Clifford, S. H.: Reduction of Premature Infant Mortality through Estimation of Fetal Weight in Utero and as Result of Analysis of Influence of Various Obstetric Factors upon Viability of 958 Premature Infants. J. Pediat. 5:139-155, Aug., 1934.

Care of the prematurely born baby must be based on a sound concept of his deficiencies which are essentially an absence of those advances made in utero between the time of his advent and full term. These can be broken down into several categories: (1) an undeveloped mechanism for regulating the body temperature, (2) a respiratory system unprepared for extrauterine life, (3) an immature digestive tract, (4) poor resistance to infection, both local and systemic, (5) insufficient stores of vitamins, proteins, and other substances necessary for normal growth and development.

Probably no single factor improves the outlook for the premature baby as much as maintenance of the initial body temperature. One is impressed by this fact, when results from nurseries in conjunction with obstetric services are compared with results attained with the same personnel and technics in institutions, where the babies are obtained an appreciable time after birth. Each obstetric unit should maintain a warm cradle for the reception of unheralded arrivals, and in the home some form of preheated crib should be improvised when the delivery of a premature baby is imminent. We cannot stress too strongly the importance of getting the baby into an environment approximating body temperature before any other measures are undertaken. The newly born infant can be resuscitated as easily while wrapped in a warm blanket as while exposed to room temperature.

The prematurely born baby experiences difficulty in regulating his body temperature for a number of obvious reasons. The brain centers are immature, the skin is thin and lacking in subcutaneous fat as well as in mature sweat glands, and muscular exertion is on too low a plane to generate much heat. It is, therefore, necessary to provide an artificial environment capable of limiting body temperature at either extreme, and a myriad of methods have been devised for this purpose, ranging in complexity and cost from air conditioned rooms and the Hess bed down to the hot water bottle and electric light globe. At present we are using units of our own construction which provide efficient thermal control at a low cost for construction and maintenance.

These are made of wood and measure 24 inches in length, 14 inches in width, and have a depth of 20 inches. They are mounted on legs to bring them to a convenient height and the area beneath each box is utilized for storage of individual equipment. A false bottom, constructed to allow free circulation around its edges, is fitted at about half the depth and upon it rest the mattress and bedding. Beneath this support is a heating element, controlled by a calibrated rheostat, and a container from which water can be evaporated. The variety of elements available under existing conditions is limited and utilization of electric light globes and a chick incubator control, as suggested by Hess, deserves consideration. A total wattage of between eighty and one hundred will maintain an even temperature in our units. A hole large enough to admit a tube is bored through one end of the incubator so that oxygen can be administered even when the box is closed. The total cost is in the general range of $25 per unit (fig. 1).

Several principles should be kept in mind, regardless of the equipment used:

1. While general rules can be formulated which correlate birthweight with optimum temperature, they are merely approximations and a certain amount of adjustment will be necessary for the individual patient. A temperature range of from 90° F. to that of the room should be available and the exact point determined in accordance with the infant's body temperature.

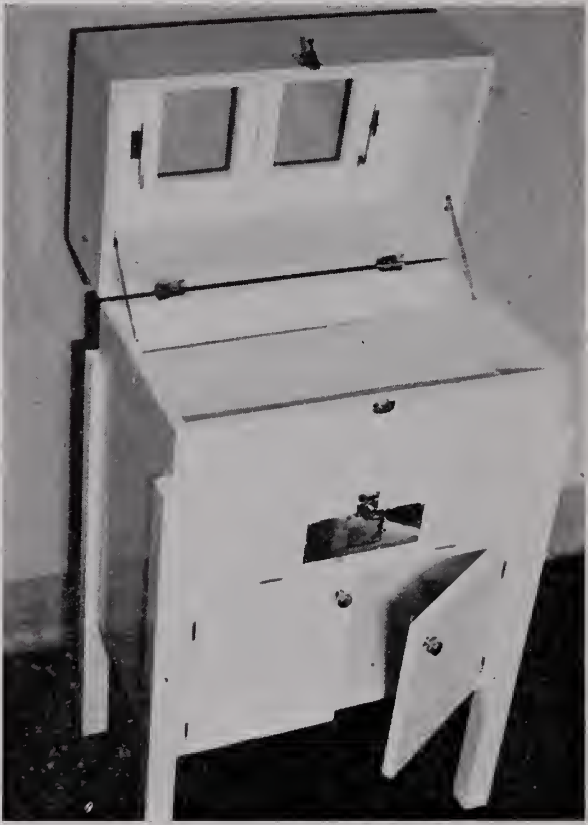

Fig. 1. Incubator Unit.

2. A stable temperature is probably of greater importance than is the exact degree at which it stabilizes; daily temperature swings of four or five degrees seem more harmful than a constant temperature of less than 98.6° F. In fact, it is often difficult to keep a small baby's temperature stabilized at that point. An excessively high temperature is as detrimental as one excessively low.

3. The humidity of the environment must be controlled as well as the temperature. This can be done in the incubator by exposure of surfaces of water for evaporation. A relative humidity of 65 per cent is desirable for the smaller patients, while larger ones thrive best at a lower value.

4. Undressing the baby, cooling the incubator by opening

it, or otherwise disturbing a regulated environment usually does more harm than the benefit derived from a variety of manipulations. Meconium is sterile and relatively nonirritating so that changes of clothing can be kept to a minimum during the first days. Needless to say, bathing of any type is contraindicated. During the first day the incubator need be opened only for temperature readings (taken by rectum for one minute and usually not necessitating the removal of diapers), and for removal of pharyngeal collections.

5. Deficiency of subcutaneous insulation makes full clothing of the baby necessary. Some form of headdress should be included as well as stockings. The clothing and blankets should not be heavy enough to interfere with the inherently weak efforts at muscular activity.

6. With growth the premature becomes constantly more capable of regulating his own temperature and it is important that he be allowed to do so. It is worthwhile to lower the incubator temperature occasionally in order to observe the baby's response to change.

On a par in importance with regulation of body temperature is establishment of rhythmic breathing. Several factors make this difficult; the immature respiratory center, lack of structural adaption of "fetal" lung tissue for gaseous exchange, and the undeveloped state of the respiratory muscles, which not only limits vital excursion but also handicaps in handling respiratory tract secretions. Establishment of the initial effort is no more difficult than in the full term infant, provided no deterring agents have been employed during labor. Oxygen is administered to most premature babies for a varying period after birth. It is essential in many instances, and in others is desirable as an aid to preventing fatigue. It is allowed to bubble through a bottle of warm water before passing into an open mask, either a kitchen funnel or a piece of roentgen film coiled to form a cone. Oxygen administration is discontinued as soon as the patient is able to maintain good color without dyspnea.

Carbon dioxide-oxygen mixtures have a definite place in treatment of small babies, especially in initiating respiration and supposedly in aiding to overcome atelectasis. It must be remembered, however, that the hyperaeration inherent to existence within a medium of high carbon-dioxide concentration represents exertion on the part of the baby and this may lead to exhaustion. On our service, we usually order the use of such a mixture for five minutes every hour or two and provide oxygen or atmospheric air during the rest of the time.

Inauguration of food intake is decidedly secondary to the establishment of rhythmic breathing and a stable temperature. The baby is best left undisturbed during the first twenty-four hours and then feedings are usually started by gavage. The technic of gavaging a small infant is simple yet dangerous when not properly performed. The tip of a No. 8 soft rubber catheter is introduced into the mouth, placed on the back of the tongue and, as the baby begins to suck, introduced into the esophagus and hence into the stomach. The calculated amount of fluid is then allowed to flow in by gravity and at a rate slow enough so that the feeding may be discontinued at the first sign of regurgitation or choking. Gavage feeding has the advantage of conserving the infant's energy and in preventing the chain of aerophagia, regurgitation and aspiration so commonly seen after bottle feedings. It is quickly accomplished and does not require removal of the infant from the incubator. We have not observed that properly executed gavage leads to loss of the sucking reflex, even when continued over a period of weeks.

One must be governed entirely by the strength of the individual baby in deciding when to institute bottle feeding. Many of the larger prematures are started almost immediately. Usually by the time the temperature has stabilized and there is a fairly regular weight gain, they may all be given a trial with the Breck or harelip feeder. If this advance is tolerated, it can be continued until further progress justifies graduation to the nursing bottle or breast and if it is not, gavage can be reinstituted and a further trial made later.

Day of Life	Total amount (to be divided into six feedings)	Remarks
First	Nothing unless the baby is over 4 lb. and vigorous; then 10 per cent lactose water.	Fluids by hypodermoclysis or vein not to exceed one ounce per pound in total.
Second	One ounce per pound.	Parenteral fluids as on first day if necessary.
Third	1.5 ounce per pound.	Babies over 4 pounds tried on Breck feeder or bottle.
Fourth	1.75 ounce per pound.	
Fifth	2.0 ounces per pound.	Vigorous babies between 3.5 and 4.0 pounds tried on Breck feeder.
Sixth	2.0 ounces per pound.	
Seventh	2.5 ounces per pound.	
Thereafter	3.0 ounces per pound.	Start cevitamic acid on the fourteenth day and fish oil concentrate by the twenty-eighth.

Table 2. Daily Feeding Schedule.

Premature babies thrive best on breast milk and every effort should be expended to assure adequate and continued lactation in the mothers. When this food is not available, we have found that an evaporated milk and Karo formula is as satisfactory as a variety of proprietary milk mixtures. If a formula is made to simulate breast milk in caloric value (seven parts of evaporated milk, one part of Karo and twelve parts of water), then the optimal amount to be given each day can be calculated from table 2, remembering that often the baby cannot go as fast as the schedule allows and that it is far more desirable to sacrifice gain in weight than to run the risk of aspiration or a break in nutrition.

It will be seen that feedings are based upon a four hourly schedule and we believe this to be sound for several reasons: first, small babies cannot well tolerate food given more often; second, it allows for rest which is so essential; third, despite their small size, steady growth can be obtained on an intake of sixty calories per pound per day and this amount can easily be provided in six equal feedings.

Absence of adequate stores of accessory substances, plus an increased demand due to a rapid rate of growth, make early addition of several vitamins essential. Small amounts of ascorbic acid are started by the end of the second week and a potent concentrate of A and D is given at the end of the fourth. Vitamin K, or a comparable synthetic, is given to all prematurely born infants during the first day of life unless the mother received an adequate amount prior to parturition. The anemia seen in premature infants is not primarily an iron deficiency state and consequently we rely on transfusion when the hemoglobin reaches a critical level. Small amounts of ferrous iron are of definite value from the fourth month of life on.

Infections are prone to strike the small baby and frequently result in an unfavorable outcome. The signs and symptoms may not of necessity resemble those seen in the full term infant and close attention to appetite, weight gain, presence of vomiting, and character and number of the stools is important. The temperature of a prematurely born baby may tend downward or fluctuate between two extremes during an acute infection. Strict isolation of the infant, use of as few attendants as possible and insistance on elimination of contacts with respiratory infections go a long way in prophylaxis. Handling must be kept to a minimum and baths are best eliminated until a weight of five pounds has been attained. The pernicious habit of smearing premature babies with a variety of medicated oils deserves special condemnation. Once the presence of an infection is suspected the same diagnostic and therapeutic procedures as are used in larger infants are applicable. Transfusion, parenteral fluids and sulfonamide drugs are well tolerated and give results comparable to those seen in other weight groups.

The technic of transfusing a prematurely born baby is quite simple and analogous to the procedure at other ages. The blood is crossmatched and administered in amounts not exceeding 10 cc. per pound body weight. A scalp vein is usually the best route and a short, bevelled needle of about 26 gauge is usually safest. We have found a 50 cc. syringe connected to a Leur-Kaufman syringe by a piece of gum rubber tubing to be an excellent method of administration. With such an apparatus the physician need only hold the needle in place while an attendant cares for the actual injection of blood. The type of tubing is of some importance in that its flexibility provides a safety valve between the large syringe and small bored needle.

We are probably addicted to the use of a larger number of transfusions than is absolutely necessary and we include among the indications such symptoms as: (1) failure to regulate the body temperature after one week in the incubator, (2) appearance of an irregular temperature in an infant previously stabilized, (3) flattening out of the weight gain curve or an unexplained loss of weight, (4) appearance of abnormal stools, vomiting or refusal of formula, (5) any local evidence of infection; coryza, cough or skin lesions, (6) persistent icterus or a low hemoglobin.

A daily record should be kept on each baby and this should include, especially, simultaneous records of body and environmental temperatures, the actual amount of food offered and taken, and the weight.

One further point deserves emphasis, as we have learned after several sad experiences. The physician's duty does not end when the premature reaches five pounds, since all of his good work can go for naught after a few hours of mismanagement at home. A thorough checkup of facilities for the care of the baby and especially the knowledge that the prospective home is free from communicable infections is imperative. Then, before the baby is released, the mother should come to the hospital and observe the care given her baby or, better yet, actual care for him under supervision, until she has the ability and confidence to go ahead on her own.

The prognosis for the premature baby varies with a lot of factors, the most important of which is the birth weight. If the cause of the premature labor is not deleterious to the baby's health and the delivery results in no handicapping injury, the prognosis varies directly with the physician's ability to provide by artificial means those endowments inherent in the full term baby and deficient in the prematurely born. The first forty-eight hours are by far the most critical and, once the baby survives this period of trial, his outlook for life improves rapidly. There are actually very few discriminate data to support the current contention that the prognosis for continued physical and mental development in the premature group is greatly divergent from the expectancy of the full term baby.

VITAMINS IN SURGERY*

William F. Howard, M.D.
POCATELLO, IDA.

One closely associates vitamins and hormones as activators of vital processes. They seem to act in a similar manner or even as synergistics. The hormone is produced in one part of the body and activates a process in some other part. Also, the same hormone from a different individual or from a different species or even a different order of the animal kingdom produces an identical effect when administered artificially.

Vitamins are produced by members of the vegetable kingdom and are utilized by the members of the animal kingdom in vegetable foods. There are some rare instances in which the animal synthesizes some vitamin necessary for its own processes. The rat produces its own vitamin C. Lambs produce their own niacin as do some ruminants. Any vitamin, so far as known, acts in a similar manner in practically all animals.

It is not known that the human being produces any vitamin. There is a possible exception in pantothenic acid which is classed as a component of vitamin B complex. This may be only apparent because pantothenic acid is said to be present in all living tissues and is a product of life processes. What is a hormone to a plant becomes a vitamin to an animal. Chlorophyll is very similar to hemoglobin. The plant hormone in wheat germ becomes a vitamin tocopherol, when eaten or administered to an animal. Animal hormones are not used by plants except by decomposition as fertilizer. The marvelous growth and development produced in plant life is brought about by the plant's own vitamins and hormones. Vitamin B is a hormone to the plant because it is produced in the leaves and it promotes root growth, one gram vitamin B being demonstrated sufficient to activate 1200 miles of root growth.

One must continue to relate in this discussion the marvelous processes of vitamin activity. They seem to be proved and their use in human life is proving to be decidedly for a better physical and mental development. Many doctors question the claims made for vitamins as they questioned the role of bacteria in the nineties. It is certainly conceivable that the health role to come from vitamins may surpass that realized from a knowledge of bacteria, but with the difference of negative and positive. So far, we employ vitamins to maintain optimum nutrition. This high degree of nutrition, including sufficient tissue food, increases the body resistance to bacterial activity. On the verge of the possibilities of the use of gramicidin, a new era of general good health comes in view.

This knowledge and its application continue to grow. About two decades ago a few vitamins were known; and much longer ago the idea, not formulated, had occurred to a number of thinking men. In 1920 vitamins A, B, and D were known. None of them were synthesized. Now vitamins have been synthesized and manufactured in quantities at greatly reduced cost. This makes them available to the people needing them. It also corrects the mistakes in diet resulting from changed processes, preparation of common foods and manner of their selection and cooking. If one will not return to natural foods, he can supply the resulting deficiencies artificially.

When one observes so marked an effect on the physical being by these activators, it naturally comes to mind that, while they affect the brain, they or some of them must extend their action to mind or spirit indirectly. Then a wider field is open to vitamin activity. We can speculate on the indirect effects of vitamins as a cause of conduct and at least question some avitaminosis as a cause of immorality and even suspect crime to be the result of some form or degree of vitamin insufficiency. As far as I know, no one has gone further than that in speculating on these activities.

There is an increasing consideration of nutrition in surgery, prior to and following surgical operations, and it is a growing belief that the preparation and aftercare of a surgical patient may be fully as important as the skill and efficiency of the surgeon doing the operation. Carefully prepared statistics show that there is less morbidity and less mortality among surgical patients receiving good nutritional care. This must include foods and vitamins. Lack of foods leads to starvation, and lack of vitamins to deficient nutrition. They are not the same thing but both foods and vitamins are essential.

One can live much longer without vitamins than without foods. Foods act as materials to be used by the body and vitamins activate functions of living processes. Foods are used up and changed to wastes to be excreted from the body; vitamins are not used up but they act as enzymes to activate physiologic processes. Some vitamins are stored in parts of the body for continued or future use, others perform their functions and are excreted; and even the stored vitamins are gradually eliminated so that a continued supply is needed. Vitamins generally act as coenzymes and are mostly synergistic. Some few, like vitamin K, seem to act independently in some special physiology, though further study may develop connections not now recognized. Carotene, for example, a precurser of vitamin A, is metabolized in the liver by the enzyme carotenase into carotene A, B and G, A and G becoming one molecule each and carotene B becoming two molecules of vitamin A. Many other changes have been observed without known significance.

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*Read before a meeting of Pocatello Medical Society, Pocatello. Ida., June 4, 1942.

Thiamin, riboflavin, niacin, the carotene of Jersey and Guernsey cows' milk, vitamin A of Holsteins, pyroxidine, ascorbic acid (C) and even alphatocopherol (E) all have some individual and common nutritional effects on skin and mucous membrane. With a coenzyme action almost symbiotic of such extent, the special vitamin deficiency may be slow in producing symptoms casually recognizable. But the effect can gradually decrease nutrition to a marked low level.

The best source of vitamins is found in the natural food supply and it does not require a great variety of foods to give the necessary vitamins to maintain good nutrition. Many people for various reasons fail to eat those necessary foods regularly enough, and this leads to partial deficiencies. This condition carries on for long times without definite symptoms, but, as Sedenstricker says, "chronic partial deficiency produces functional, and later organic changes which interfere with the absorption and utilization of the small amount of vitamins remaining available, so that finally a critical level of depletion is reached." Three students abstained from vitamin C and at the end of three months were free from symptoms as far as could be determined, but at six months they showed marked vitamin C deficiency.

It is very rare that any one vitamin is wholly naturally lacking. When not regularly supplied, it only gradually disappears until functional and organic changes occur sufficient to produce symptoms. Then, because of such changes, other vitamin deficiencies appear.

There have been observed four conditions that produce avitaminosis: insufficient intake, insufficient absorption, increased requirements and increased elimination. To specify, insufficient intake may result from ignorance, food fads, personal taste or personal dislike, anorexia, poverty, reducing diets, alimentary disease, edentulosis, diabetes, excess carbohydrates, alcohol. Decreased absorption may result from gastrointestinal disease, stenosis, hyperemesis gravidarum, ileitis, colitis, short circuit gastrointestinal operation, polyposis and other conditions such as related to liver disease, postoperative hyperfunction.

Increased requirements follow infections with fever and loss of body activity, hyperthyroidism, pregnancy, rapid growth, excess carbohydrates, polyurea, alcohol, intravenous glucose; and increased excretion accompanies polyurea, diabetes, sweetened or insipid, continued excessive liquid intake, per oram or parenteral.

Some of these conditions are present in a very large proportion of surgical patients. If they are corrected, the patient better stands the operation and makes a more speedy recovery. Such patients do usually recover from surgical operations, but some do not, and we have accounted for this mortality in various ways. These excuses have varied from decade to decade as we learn more fully that postoperative pneumonia, liver-kidney failure, pulmonary collapse, prolonged shock and some other seldom-occurring conditions are really too rare to account for the mortality that does occur in good surgery. Then there is rupture of the wound that has not been satisfactorily accounted for until a vitamin cause was demonstrated. Lack of vitamin sufficiency thus increases both mortality and morbidity of surgical operations.

We have been familiar for a long time with the symptoms of alcoholic neuritis in England and becoming more prevalent in the United States. It has been accepted, but never demonstrated, that alcohol over a long period produced a physical effect on certain nerves giving rise to neuritis. It now appears that alcohol, by increasing metabolism, increases elimination of vitamin B, and it does lessen the desire for food so that less vitamin B is taken in food, and thus it is depleted in intake and elimination. There is then not sufficient vitamin B for nutrition of the nerves. Nerve and muscle pain and tenderness, motor or reflex disturbances, and later edema and tachycardia may follow.

The Wernicke syndrome is recognized among pathologists as due to thiamin deficiency. It includes opthalmoplegia, ataxia, polyneuritis and clouding of consciousness. There may be gastrointestinal disturbances, vomiting and diarrhea. The special pathology resulting in this syndrome is confined to the periventricular gray matter which shows small foci of degeneration and varicose changes of the vessels of that area. This condition results after continued use of alcohol.

Similar symptoms follow the continued parenteral administration of glucose and salt solution. After four or five days of intravenous solutions there occurs edema, nerve pain or tenderness and motor asthenia. These symptoms have long been considered due to water logging and it may be true that too much fluid does cause them, but not mere water logging. It has been shown that the water by diuresis eliminates the water soluble vitamin B, and by its administration avitaminosis and its symptoms are stopped.

Peripheral neuritis, with quadriplegia, may follow the use of insulin in treatment of postoperative psychosis. There is from the insulin a tremendous carbohydrate metabolism with loss of vitamins. With presence of niacin the early dehydrogenation proceeds about normally. Later the residue of insulin and niacin, with depletion of carbohydrates, so affects the physiologic processes that thiamin, niacin and other vitamins in turn become depleted. Then there is approaching complete lack of vitamin B, also lack of activator of nerve nutrition of the entire nervous system.

It is not uncommon for these symptoms to occur in severe infections and following some surgical operation such as obstructive gastrointestinal operations, cholecystitis, all varieties of peritonitis and extensive infected wounds. Large amounts of glucose in salt solution, vomiting and fever seem to bring on these symptoms. Vomiting prevents giving vitamins in foods, fever causes hypermetabolism with increased energy requirements, and glucose, the only available alimentation, by its water washes out in diuresis the water soluble vitamins. The only correction of this condition is vitamin B and nicotinic acid. In some of these deficiencies, occurring postoperatively and following considerable parenteral intake, it becomes necessary to employ all the components of vitamin B in order to more fully relieve the patient.

Lanman and Ingalls have shown that scurvy in guinea pigs interferes with wound healing. They measured the strength of wound healing in stomach and abdominal wall and found it required a pressure of 160 mg. Hg. intraabdominally in normal animals and only 65 mg. in scorbutics. Stomach wounds ruptured at 70 mg. in normal and at 30 mg. in scorbutic guinea pigs.

Payne reported sixteen deaths after partial gastrectomy, twelve of which showed almost complete absence of healing at the site of the suture line, and resulting peritonitis.

In the case of a volunteer in research, deprived of vitamin C for six months, a wound failed to heal normally and a biopsy showed almost complete lack of intercellular substance. Parenteral vitamin C was given with good healing and the biopsy showed sufficient intercellular substance. Vitamin C in the urine almost disappears during wound healing. Large doses parenterally do not increase its excretion during the healing of large wounds or extensive fractures. This seems to show that vitamin C is necessary to the healing process.

Chemical studies have shown that the components of vitamin B have to do with all tissue respiration. The lack of vitamin B, then, can affect any tissue and if not replaced by some other respiratory activator, symptoms of disease and lack of vitamin B develop. A knowledge of the need and functions of vitamin B is required in all medical and surgical practice. Its five active components act together and also separately. They are all water soluble and may be eliminated by any excess of water, and each is capable of forming soluble protein compounds. Thiamin, nicotinic acid or niacin, and riboflavin are concerned in the process of cell nutrition and cell respiration. These three and pantothenic acid are thought to be present normally in all cells. If this is true, they are necessary in the healing of wounds and in recovery from illness.

Starr lists five important considerations in surgical patients: (1) state of hydration, (2) protein metabolism, (3) acid-base balance, (4) carbohydrate reserve, (5) vasomotor tone, circulation and heart reserve. Natural or supplied vitamins support all these conditions. Holman's recommendation is an adequate protein diet, sufficient carbohydrates, and use of vitamins before and after operation. Many of our surgical patients do well without these measures because they have no depletion. Some do less satisfactorily and some do badly because of certain lack, while others fail to recover because of very low or no reserves. If we do not practice routine clinical or laboratory tests, we must give our surgical patients the advantage of diets and vitamins.

ALWAYS USE MILD TINCTURE OF IODINE

The strong (7 per cent) tincture of iodine never should be applied to a wound, according to an announcement by E. Fullerton Cook, Phar.D., Philadelphia, chairman of the Committee of Revision of the Pharmacopeia of the United States of America, *The Journal of the American Medical Association* reports in its July 18 issue. The strong tincture evaporates quickly, leaving crystals of free iodine in the wound, which injure the tissues and prevent healing.

According to Dr. Cook, *The Journal* says, "pharmacists should always sell the U. S. P. Mild Tincture of Iodine for first aid, not the strong tincture of iodine; neither should they prepare the mild tincture by diluting the strong tincture, for then it will contain potassium iodide instead of sodium iodide, and the alcohol percentage will not be correct. Sodium salts are much better for application to a wound than are potassium salts."

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PNEUMATIC HAMMER DISEASE IN UNUSUAL LOCATION

John H. Mills, M.D.

SPOKANE, WASH.

There are numerous reports in the literature of industrial and occupational medicine dealing with various phases of peripheral vascular, arthritic and muscular diseases,[1] produced by exposure to heavy vibration occasioned by the prolonged use of modern tools. The type of tool which is the most common offender in this regard is the pneumatic hammer or "jack hammer" as it is often called.

That disorders produced by such vibrating tools may become more frequent, due to recent industrial speed-up and increasing employment of machine tools in industry, is quite likely. This possibility and the unusual features of the case presented occasion this report.

The literature reveals that the extremities most often involved in pneumatic hammer disease are the hands which grasp and guide the tools used. The degree of involvement of an extremity is in direct proportion to the amount of exposure to which the extremity is submitted and is often entirely unilateral as, for instance, the left hand of limestone workers which tightly grasps the chisel.

It is also well known that pneumatic tools with higher rates of vibration, such as are used by stone cutters (3000 per min.), are more likely to cause vasomotor disturbances than those possessing lower vibration rates, such as the pneumatic hammer used by riveters. That the feet and legs, with their added vulnerability to circulatory impairment by being farther from the heart, are not oftener affected may be accounted for by the infrequency with which they are exposed to such trauma.

CASE REPORT

The patient, a rather stoical Nordic male, aged 37, presented himself on September 18, 1941, complaining that about February 1 he began to experience aching and numbness in the left calf on walking. He stated that the left ankle "gave out" easily; that the left foot "slapped" in walking. These symptoms had gradually increased, becoming so severe that he had been unable to work during the entire summer.

There were no complaints referable to the right foot or the hands, and general inquiry regarding organs and organic systems was entirely negative. There was no history of antecedent injury or infection that might have contributed to his present discomfort. He smoked the usual pack a day of cigarettes and was a light user of alcohol. He stated that he had been seen by at least half a dozen doctors and he had been told by several that he had Buerger's disease.

The clue to the etiology of his illness was suggested by the notation that the patient was a powder man for a road construction gang. Avoiding any suggestion as to the relationship between his occupation and present complaint, it was ascertained that during the summer of 1940, from April through October, the patient had used a pneumatic hammer in drilling rock each day during the entire working day. He had further pursued the unique practice of pressing the drill down with his left foot after it had been started by hand, and continuing drilling by resting almost his entire body weight on the machine through the left foot. The accuracy of these statements was verified by an investigator for the Washington State Department of Labor and Industries.

The patient volunteered the information that for several hours each day following his work the left foot "felt numb and dead," but he experienced no other symptoms until the beginning of February, 1941. At no time had he noticed pallor as a result of cold, which is so commonly observed by the pneumatic hammer users in the limestone industry. This may be due to the fact that the feet are not as easily available for scrutiny or poor observation on part of a phlegmatic individual. It is to be noted, however, that the onset of symptoms occurred several weeks after the beginning of cold weather.

Results of urinalyses and examination of blood and urine were normal. The general physical examination revealed no abnormalities except as relating to the left leg. The left foot showed marked dependent rubor; it was much colder to the touch than the right. The end of the fifth digit showed marked trophic changes. In the sole of the left foot there were several small fissures. The skin of the left leg and foot, from the midcalf downward, was thin, glistening and atrophic.

On the dorsum of the left foot near the base of the toes was a sanguinous crust 3x4 mm. The patient explained the presence of this lesion by saying that some eight weeks previously a physician had pinched his foot to see if he had any feeling and an ulcer had developed in this area of trauma. Nothing had been applied to this region that might have delayed healing and the patient did not suffer from any symptoms to suggest a secondary infection of the traumatic ulcer.

The femoral pulse at the inguinal region was normal to palpation on the left side and equal to the pulsation of the same vessel on the right. However, no pulsation could be detected in the popliteal region or distalward in the left leg. Pulsations in the vessel in the right lower extremity were normal to palpation. When the legs were elevated to 30 degrees above the horizontal, the left foot blanched much quicker and to a more marked degree than the right. Upon resuming dependency there was a pronounced delay in resumption of dependent rubor on the left, but at the end of about a minute the former marked rubor was even more intense. The right foot reacted normally to postural tests.

The left calf was one and a half inches smaller in circumference than the right. When the patient walked there was a noticeable slapping gait of peroneal weakness on the left. Weakness of the gastrocnemius muscles was much less marked than that of the peroneal muscles. After a minute to a minute and one-half of brisk walking, he was forced to stop becaues of cramping pain in left calf muscles.

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Oscillometric readings gave normal response in the upper thigh bilaterally, but below the knee there was almost total absence of pulsation on the left side, pulsation of vessels in the same region on the right side being four scale divisions on the oscillometer.

Immersion of the legs in water at a temperature of 110° F. to the level of the middle of the calf caused an increase in the pulsation of the vessels of the right calf, but no detectable increase in the barely perceptible deflection of the indicator needle when readings were taken of the left calf. Subcutaneous injection of acetyl-beta-methyl-choline of 0.10 grams caused no appreciable change in the oscillometric reading in the affected extremity, though there was an increase in pulse rate of from 75 to 80 beats per minute and a fall in blood pressure of 20 mm. of mercury, which was accompanied by slight diaphoresis.

Since no effect was observed following use of a powerful vasodilating drug and use of heat did not produce detectable increase in arterial circulation, it was felt that this patient suffered from a permanent occlusive arterial disorder similar, if not identical, to thromboangiitis obliterans rather than the more commonly described Raynaud's syndrome, which is more frequently reported to result from use of the air hammer.

The patient was placed on a regimen of contrast baths, massage, postural exercises and nicotinic acid by mouth in dosages sufficient to produce considerable flushing of the face and neck. At the end of about six weeks of this treatment the patient stated that he felt less pain and he could walk a little farther and a little faster before experiencing cramps in the affected leg.

However, when seen on November 24, shortly after the onset of cold weather, he complained of increasing pain in the affected extremity and there was obvious evidence of increased circulatory impairment as shown by the development of new fissures on sole of the foot and about base of the great toe, with impending gangrene of the great toe. The Department of Labor and Industries then referred the patient to the Soap Lake Sanatorium in an effort to preserve the foot.

It is freely admitted that this patient may have been a candidate for development of Buerger's syndrome in absence of the trauma of the vibrating pneumatic hammer. However, it is felt that the total absence of findings in the right lower extremity and far advanced arterial disease of the left were very unusual for Buerger's disease. This fact and the history of exposure to vibration by use of the air hammer must be given serious consideration.

The fact that this patient had consulted several physicians, none of whom recognized the relationship between the patient's illness and his occupation, suggests the general unfamiliarity of the medical profession with this type of occupational disease.

SUMMARY AND CONCLUSIONS

A case is presented of unilateral peripheral vascular disease in an unusual location, of the type of thromboangiitis obliterans, resulting from use of a pneumatic hammer.

Since this paper was submitted for publication the left leg was amputated. The pathologic examination by Dr. William B. Dublin of Western State Hospital of the posterior tibial artery was as follows:

This artery appeared to have been occluded by a yellow thrombus. The remaining tissue was not characteristic grossly of anything but was semifibrous in nature. No calcium or other product of arteriosclerosis was seen or felt on bisecting the nodule.

Microscopic: The artery showed no arteriosclerosis. Its media was disorganized, mildly hyalinized and contained a few new-formed capillaries. The elastica interna was markedly tortuous and was flanked by hyaline substance. The lumen was filled almost completely by loose fibrous tissue, containing numerous vessels of recanalization. Even in these latter vessels the endothelium was hypertrophied. Scattered throughout the thrombus were lymphocytes and plasma cells but no polymorphs. A few lymphocytes were seen about the adventitia, and rarely in the media.

The vein showed essentially the same changes but much less marked and only mild intimal proliferation was seen, there being no thrombus.

The numerous arterioles lying in the tissue about larger vessels appeared to be new-formed collaterals. They, too, showed inflammatory changes. There was hyaline medial degeneration and obliterative intimal proliferation of a type like that seen in hypertensive disease, and this was marked. Inflammatory cells lay scattered in the walls of these small vessels and about them.

The nerve bundles seen were too few to justify a positive pathologic diagnosis; however, the preparations made with silver showed very suggestive beading and fibrillation, compatible with a diagnosis of mild to moderate axonal degeneration. The nerve bundles strained for myelin were seen only in cross section; their appearance strongly suggested that there was mild to moderate myelinic degeneration. There was no inflammatory infiltration of the nerve bundles. A few inflammatory cells lay about these bundles but they could easily have belonged to vessels lying in close proximity. The nerve degenerations, such as there appeared to have been, probably were vascular in origin.

The whole picture was typical of thromboangiitis obliterans in a moderately late, rather severe, and apparently still progressive stage. No bacteria or other infectious organisms were seen in the specimen. There was no evidence of arteriosclerosis.

LOWERING INCIDENCE OF HEMORRHAGE OF THE NEWBORN

The administration of vitamin K to the mother while she is in labor will prevent the depression of the prothrombin (blood clotting) level of the newborn and should prove effective in lowering the incidence of hemorrhage of the newborn, J. E. Fitzgerald, M.D., and Augusta Webster, M.D,. Chicago, declare in the August 1 issue of *The Journal of the American Medical Association.* "It is well known," they say, "that various types of hemorrhage in the newborn account for a considerable percentage of stillbirths and neonatal (at birth) deaths. . . ."

They found that "in none of the 641 babies whose mothers had vitamin K during labor was there any evidence of neonatal hemorrhage." Administration of vitamin K (by injection into a muscle) to babies with hemorrhage resulted in a strong increase in the prothrombin level and prompt cessation of bleeding.

In their conclusions they say that "There is a normal depression of the prothrombin level of the newborn from the second to the fifth day. This depression is much greater when certain analgesics (pain relieving drugs) are administered to the mother during labor . . . It seems particularly desirable that vitamin K should be administered when barbiturate analgesics are used."

PSYCHIATRY IN THE PACIFIC NORTHWEST

ITS DEVELOPMENT IN OUR THREE STATES

Albert C. Stewart, M.D.
and
Herman A. Dickel, M.D.
tacoma, wash.

In psychiatry we are always familiar with the mechanism of retrospection. It is said that it can sometimes be utilized advantageously. We sincerely hope that our retrospection and that of others, utilized in preparation of this paper, will be considered somewhat advantageous and a little bit of pleasure to those who hear or read it. There seems to be nothing original about this paper, and our attempt is not to offer anything particularly new, but rather to collect a group of stories and anecdotes into one paper, giving some historical facts about psychiatry as it began and progressed in the Pacific Northwest.

In 1808 there pioneered into the vast Oregon Territory a man named Henry who operated several fur trading houses during the first part of the nineteenth century in that part of the country bordering along the Rocky Mountains. White men first came to the Pacific Northwest to settle permanently in 1811, but mental illness preceded them by at least several years. In that particular year of 1808 one of Henry's fur trading houses in the foothill area far inland was attacked by Indians, and all but one of the men were killed and, we surmise, left scalped. This one man escaped unperceived and wandered around for several weeks, suffering many hardships and deprivations, including food and water, and thus ruined his normally good health. The shock of seeing his companions massacred and the hardships suffered thereafter apparently resulted in a mental disorder of some mild type. In this condition he was found wandering around by the Indians in the Snake River country and was taken by them to their camp for care.

We know from early stories that Indians of that time considered mentally deranged people as being much nearer the gods than they, and accordingly viewed them with a great deal of awe and superstition. They never harmed them and always offered them as much care as they possibly could. Such was the instance of this poor unfortunate white man. The Indians felt certain that the gods had smiled favorably upon him, and they must gently care for him; hence, for three long years they kept him in this camp, clothed him, saw that he was properly fed, and gave him every form of treatment which was as good as they themselves enjoyed, if not better.

In 1810 John Jacob Astor, head of the Pacific Fur Company, and then residing in New York City, sent out two large parties to explore the Columbia River. One was to go overland, the other by sea. The latter of these two parties came on the ship Tonquin and, arriving before their companions, established themselves at the mouth of the Columbia River in the locality of the town now known as Astoria.

The overland party left St. Louis in August, 1810, and spent the following winter on the upper Missouri River. In the spring of 1811 they resumed their westward journey, separating into two divisions, one headed by Wilson P. Hunt, the other by the now famous Donald McKenzie. This latter group (some time, then, in 1811) came upon that group of Indians who were caring for the mildly demented young man we have mentioned above. By this time he had recovered sufficiently to be able to tell in whole or in part the story of his life and his accident. He gave his name as Archibald Pelton and said that he had come from Connecticut. McKenzie took charge of him, thanked the Indians for his care, and the party proceeded on its way, experiencing many hardships, but finally arriving somewhere in the neighborhood of the lower Columbia in the winter of 1811-1812, and finally getting to Astoria on January 18, 1812.

At this time the Indians who inhabited the lower Columbia River were quite taken with the white men who were now living near and among them. They gave their special attention to some of them because of their odd characteristics, but of all the attention given, the most was directed to Archibald Pelton. The Indians, as you know, were inclined to name people according to the various abnormal conditions attached to their body or state of being. This man who so interested them, they noticed, was called Pelton, and they quite naturally supposed that the name referred to his abnormal condition.

Having no words of their own to satisfactorily designate such a condition, they immediately adopted the name of the unfortunate white man into their own language, and thereafter made use of it. He was, therefore, "Pelton," meaning foolish or insane. Any other person, that is, an Indian similarly afflicted, was "kahkwa Pelton," at first like Pelton, but later simply one of disordered mind. "Pelton klootchman" was used to refer to a demented woman. All along the Pacific Northwest coast line, but particularly in the area in which we now live, the Indians adopted this word to symbolize any or all forms of mental ailment. Later it was incorporated into the Chinook jargon and it appears in every Chinook dictionary as the word symbolizing the various forms of mental affliction.

Undoubtedly there had existed prior to this many forms of mental illness among the Indians in the Pacific Northwest, but we have no record of them even in the folklore of the Indians who now live. The white man we have described seems to have been the first unfortunate person. From that time on there were other cases of insanity in this territory, the number constantly increasing as the population increased. Finally, there were enough to cause public attention.

The first of these cases to attract was Edward Moore, a sailor who was found wandering on a beach a few miles north of Seattle in the Territory of Washington. Apparently he had been there for many days, wandering aimlessly around, becoming increasingly more demented, living on raw mussels, and getting occasional assistance from the Indians. Since it was cold and wintry, his feet, as well as other parts of his body were wet and frozen. He was brought to town and placed in the custody of David Maurer and S. B. Simons, the hotel keepers of that day. The cloth wrappings were removed from his feet, and it was found that the cold and freezing had affected his toes to the extent that they were gangrenous. The hostelers called in Dr. Williamson, a local physician. At that time surgical instruments were unknown in Seattle; as a matter of fact, were unknown anywhere in the Northwest, and so a large sharp axe was brought in, and the dead toes were neatly clipped from the unfortunate body. The poor man was kept in this hotel for several weeks, ably cared for by the hotel attendants and Dr. Williamson, who did all they could to restore him to good health, attempting particularly to alleviate his demented condition; however, all efforts failed to accomplish more than just keep him living.

The good people of Seattle and King County, guided by Maurer and Simons, then made arrangement with Dr. N. P. Burns to take him and care for him in the doctor's home town of Steilacoom, located in Pierce County, it being agreed that the doctor and the people of King County were later to unite in an effort to get the money to pay for his care from the legislature of Washington Territory. From that time on the name Steilacoom was to play a prominent part in the history and progress of psychiatry in the entire Northwest.

When the legislature of the territory convened in December, 1855, it received a communication from the commissioners of King County, in which the territory was asked to pay the bills incurred in keeping and caring for this "nonresident lunatic pauper." The communication of the legislature was considered by a committee and almost immediately dropped, but there did appear somewhat later a resolution calling for building a hospital for seamen, part of which was to be used as an asylum for the insane of the Puget Sound district.

The greatest reason for turning down the communication from King County was that the patient was not a legal resident of the Territory of Washington or King County, but just as big a reason was that the total bill for his care was $1656, and the entire income for the territorial government was $1199.88. The people of King County were paying approximately $4 per person for his care, a rate which if in effect today would annually bring in some million six hundred thousand dollars for care of the insane in that county. Small wonder that the commissioners found reason to deny the communication. Dr. Burns, upon hearing this, sent the man he was caring for back to Seattle, where a few people managed to care for him a while. They then made arrangements for a prominent sea captain to take him to San Francisco, where he was to be cleaned up and provisions were to be made for him to go to his native town of Boston. Unfortunately history does not record whether he got past San Francisco or not.

At this time in the city of Vancouver the Sisters of Charity of Providence were maintaining a small institution to care for the unfortunate people of that community and surrounding territory having any form of illness. It is recorded that the Sisters were first organized to care for the mentally deranged, and so it was quite natural that they would be caring for some of the mentally ill people in the Oregon territory, and in that part of Washington close to Vancouver. When the legislature of the Territory of Washington decided in 1862 to take definite action in connection with the care of the mentally deranged, Governor Pickering and Auditor Walker solicited propositions for those willing to undertake the tremendous task of keeping and caring for the insane of the territory.

It was about this time, so far as we can learn, that similar propositions and procedures were being carried out by the State of Oregon. In any event, the Sisters of Charity at Vancouver made a contract to care for each patient for a period of three years at the rate of $8 a week per person. Under this new arrangement the territory paid the Sisters the first year $2600. Very soon, however, many financial disagreements began to occur. Payments were being made in paper money which was seldom worth its face value, and for many years usually ran from 20 to 50 per cent below its par value. Naturally, the Sisters demanded gold coin. and payments were deferred. They then demanded interest. Final settlement was delayed for several years.

In 1866 a new contract was made with James Huntington and W. W. Hays of Monticello which is located in Cowlitz county. These men, by their contract with the Territory of Washington, were to get a dollar a day for each idiot or insane patient. They were to be paid by paper money and were to furnish land, housing, board, clothing and medical care. Originally eleven patients were received from the former keepers, and during the year one new one was added. Five of those twelve patients were men. In 1871 this contract expired.

During the establishment of Washington Territory the Army had built a few miles inland from the town of Steilacoom a fort known as Fort Steilacoom. This was abandoned for military purposes in 1868, and there were left idle houses sufficient for three hundred soldiers and land a mile square. Delegate Flanders, who was in Congress at that time, introduced a bill to give the property to the Territory of Washington for use as an insane asylum, but it was not until 1870 after much persuasion that the buildings were finally sold by the War Department to the territory for $850, equipment which had twelve years previously cost $200,000. Very soon the land itself was given to the territory. In August of 1871 the twelve patients at Monticello were transferred to their new home and Mr. Hill Harmon became their new overseer, contracting to feed, clothe and medically care for these people for five years on the property furnished by the territory.

In 1886 the Territory of Washington established by law the permanent location of its insane asylum at Fort Steilacoom and appropriated enough money for the erection of new brick buildings. A board was apointed to draw plans for the proposed buildings and immediately visited the newly erected buildings in Salem, and used many ideas obtained there. Some $200,000 were used to prepare accommodations for 250 people. Fort Steilacoom insane asylum then became the Western Washington Hospital for the Insane.

Washington had found it necessary by 1888 to increase the number of its state institutions, and therefore provided for the erection of the Eastern State Hospital at Medical Lake to care for the insane in the eastern part of the state. This was opened in 1891 with Dr. John M. Semple as its first superintendent.

By 1909 the legislature had appropriated $75,000 to purchase a hospital site near Sedro Woolley. This institution, when it was built, was known as the Western State Hospital Farm, and in 1910 Dr. A. H. McLeish was appointed assistant superintendent to superintend the work of clearing the site for hospital buildings. Temporary buildings were constructed, and about one hundred men were transferred to the new site for the purpose of clearing the land. It is reported that on New Years eve, 1911, an unexpectedly terrific gale blew up and one of the temporary buildings which was used as a dormitory collapsed, killing one of the patients.

By 1912 the first building of the new hospital was finished, and in 1913 Dr. McLeish, who had become superintendent, resigned to make way for Dr. Case of Vancouver. In 1915, during the term of Dr. J. W. Doughty who had become superintendent in 1914, and who except for a four-year period has been superintendent ever since, the hospital became known officially as the Northern State Hospital. The institution at Steilacoom in the same year became known as the Western State Hospital.

In 1915 the legislature of Washington recommended that each county provide for itself some hospital arrangement to care for the mentally ill during the period of observation prior to commitment. For a long period only one county made such arrangements, that being King county and King County Hospital, but in 1939 Spokane county made such arrangements when the new wing was added to St. Luke's Hospital in Spokane. This addition marked another attempt at private hospitals striving to incorporate within their walls psychopathic wards. An earlier attempt had been made by Immanuel Hospital in Portland from 1930 to 1937.

It was during this time that definite problems were confronting the people of Oregon. The census of the United States reported in 1850 on the number of insane and idiotic in that state and commented on the ratio of this class of persons compared to the normal. In 1860 the newspapers were complaining because the insane were "roaming the country, terrorizing the women and children and making themselves the subject of ridicule." The first step in caring for these people was by the method of farming them out to individuals who received pay from the state for their custodial care. In September, 1861, Dr. J. C. Hawthorne established the East Portland Asylum in association with Dr. A. M. Loryea, located at First and Taylor

Streets in Portland. In 1868 Dr. Hawthorne contracted with the state of Oregon to care for the insane.

Over quite a long period of time this arrangement functioned satisfactorily, but soon Governor Woods, who had made the arrangement for this manner of "farming out" the patients, complained that it was not a humanitarian method, and in 1880 the legislative body provided for erection of an asylum to be built in Salem. This was completed in 1883 and 261 male patients were transferred by train from the Portland institution to Salem on October 23. The female patients were transferred several days later, and the first listed superintendent of this hospital was Dr. Horace Carpenter. Dr. S. E. Josephi soon became the superintendent. This was the first group of buildings specifically built for the state care of the insane, although it was not the first hospital in the Northwest.

In 1893 the legislative body of Oregon had provided for a branch asylum to be known as the Eastern Oregon Insane Asylum, but the institution was not actually opened until 1913, following an initiative measure in 1910. This institution, known as Eastern Oregon State Hospital, located in Pendleton, had as its first superintendent Dr. W. D. McNary. The Salem institution was relieved of its burden somewhat earlier when the idiots and feeble minded were reomved to the Fairview Home in 1908.

Idaho, which had established its first state hospital in Blackfoot in the early 1890's, found by 1905 that they needed another institution. The events surrounding the building of this second hospital are rather interesting and unique. In 1905, when the second hospital had been founded and money had been appropriated for its erection, Dr. John W. Givens took from the hospital at Blackfoot a group of ten women and twenty men and started toward the new town where the hospital was to be erected. They went by railroad to the end of the line, there purchased wagons, tents and supplies, and went on for forty miles to the site of the present Idaho State Hospital North at Orofino. The women did the cooking, and the men literally carved the buildings out of the hillside. It is recorded that they even made their own brick and mortar. Prior to the time of any Idaho state hospital, the insane of that state were cared for by the hospital system in Oregon which maintained a contract with the state of Idaho.

The Federal Government first began to care for the mentally ill in this territory in 1904, when they contracted with Morningside Sanitarium in Portland, to care for the insane from the Alaskan area. Since that time the sanitarium has cared for those individuals with this same arrangement. Following the first World War all of the individuals who became mentally ill and fell under the jurisdiction of the Veteran's Administration in the thirteenth district, comprising Oregon, Washington, Idaho and Alaska, were cared for at Western State Hospital at Fort Steilacoom, a contract existing between the state and the Veterans' Bureau. This work was begun in 1920, and one of the institutional physicians was directly in charge of these patients. In 1924, following completion of new buildings on American Lake, all these patients were transferred and placed under the direct supervision of the medical staff of the Veterans' Hospital. Similar hospitals are in operation at Roseburg, Oregon, and Fort Harrison, Montana.

It is extremely difficult to complete the historical data on private sanitariums in the Northwest. As we have recorded above, Dr. Hawthorne had started a sanitarium in Portland in 1861. He later rebuilt this at East 12th and Hawthorne to accommodate his increasing practice and state cases. We have also recorded such sanitariums as those at Steilacoom, Washington, and the Hot Lake Sanitarium east of La Grande, Oregon. It is reported that Dr. Walter Williamson operated a sanitarium in Portland, and we know that the Morningside Sanitarium was used for private cases in Portland prior to its being taken over by the Federal Government for the Alaskan patients in 1904.

In 1908 there was established in Seattle a small sanitarium for the care of the mentally ill people. This was established by Dr. J. B. Loughary and Dr. Waughop who had at one time been associated with the Western State Hospital. Dr. Loughary was the first to devote his entire time in private practice to psychiatry, and the sanitarium they established in Seattle, called the Puget Sound Sanitarium, was aided by Dr. Williamson from Portland. Because this was within the city limits, and many of the patients were rather violent, considerable complaint was directed to the county officials from the public, and in 1909 an edict for its removal was given by King county.

At this time Dr. Snook had established in the little town of Steilacoom the Iron Springs Sanitarium, and he had run into much the same difficulty, so that he was looking for a new location. Drs. Snook and Loughary then found a place near Puyallup, bought the property, established a sanitarium, and transferred to it the name of Puget Sound Sanitarium. Because of Dr. Loughary's poor health, Dr. Snook immediately took charge and carried on as medical superintendent. This sanitarium still exists under the same name, but now under the guidance of the senior author of this paper, Dr. A. C. Stewart, and the first patient transferred from the earlier institution in Seattle is still being cared for by it.

In 1867 was established the Willamette University Medical Department, but this apparently paid no attention to teaching of nervous and mental diseases. In 1887 the University of Oregon Medical School was organized, and its first catalog lists Dr. S. E. Josephi as Dean of the Faculty and Professor of Obstetrics and Psychological Medicine, including lectures on diseases of the mind. Essentially the same arrangement existed as late as 1897, although there were now lectures by Dr. Josephi on Diseases of the Nervous System, By 1905 this course included special lectures and clinics at local hospitals and the outpatient department. The medical school included in its curriculum in 1907 special lectures on insanity by Dr. Robert L. Gillespie and special clinics were given to the third and fourth year students at the local hospitals and the hospitals for the Alaska insane.

In 1912 a more elaborate system of departments was established, including Departments of Nervous and Mental Diseases and Medical Jurisprudence with Drs. Josephi, House and Williamson lecturing. Neurologic teaching was included under the title of Nervous and Mental Diseases until 1922, when the subdivision of psychiatry was made under the Department of Nervous and Mental Diseases with Dr. Lewis F. Griffith as clinical lecturer and Dr. Laurence Selling as clinician in psychiatry. In 1925-26 Dr. J. Allen Gilbert was listed under the Department of Nervous and Mental Diseases as professor of psychology. Following the organization of a definite Department of Psychiatry in 1932, Dr. Henry H. Dixon became associate clinical professor of neuropsychiatry with Dr. Selling the clinical professor of neurology. This arrangement continues to exist. In 1931 child guidance was begun for Multnomah County, and this was extended to include the State of Oregon in 1937, all under the direction of the medical school in Portland.

Thus psychiatry began and grew in the Pacific Northwest. Undoubtedly a great deal has been left unsaid. We would appreciate adding to this paper at any time anyone can contribute information concerning the earlier workers in the field.

In conclusion, we wish to thank those who have already contributed a great deal in preparation of this paper. Foremost we would thank Dr. W. M. Keller who has for so many years ably superintended the Western State Hospital and has always been foremost in the progress of psychiatry in Washington and the entire Northwest. The material he placed in our hands was invaluable, and we constantly found him a ready source of information. The other state hospital superintendents likewise contributed, and we thank especially Drs. Doughty and Evans. We wish to thank Dr. Olaf Larsell for his contribution concerning the Oregon Medical School.

THERE IS EVERY REASON TO BELIEVE VACCINATION AGAINST YELLOW FEVER IS WARRANTED

Statements made in an editorial in the Chicago *Tribune* regarding the development of jaundice among army personnel in connection with yellow fever vaccination are "unwarranted" and "wholly unjustified," *The Journal of the American Medical Association* declares in its August 1 issue. *The Journal* says "There is every reason to believe that vaccination against yellow fever is warranted and that the occurrence of 62 deaths and some 28,000 cases of jaundice associated with the vaccination of millions of men is far less serious than would be an epidemic of virulent yellow fever among soldiers sent to the tropical areas in which our army is now engaging the enemy."

The Journal charges that the *Tribune* by publishing such an editorial has done a disservice to American medicine and that "by the fears it may create among the soldiers now being inducted into our armed forces it will injure morale and make more difficult the task of assembling the type of force that must be assembled to meet the challenge of our enemies."

"The charge has been made by the Chicago *Tribune* (July 27, 1942) that the medical department of the United States Army and thereby our government has been 'guilty of a grievous error of judgment.' The *Tribune* asks 'How did it happen that wholesale vaccinations were undertaken with a vaccine which quite obviously had not been thoroughly tested in advance?' The statement in the Chicago *Tribune* is unwarranted. Testing had been adequate. The vaccine had been tested in hundreds of thousands of cases. The procedure is, however, a new one and, as with all procedures in the field of medicine, the use of any new technic in the field may yield information which is quite different from that obtainable on preliminary testing. There is every reason to believe that vaccination against yellow fever is warranted and that the occurrence of 62 deaths and some 28,000 cases of jaundice associated with the vaccination of millions of men is far less serious than would be an epidemic of virulent yellow fever among soldiers sent to the tropical areas in which our army is now engaging the enemy.

"The American Army has always been the most healthy army in the world. Its sickness and death rates today are, even with the temporary invalidism associated with the

CLINICAL REPORT

MULTIPLE FRACTURES

Charles L. Coyle, M.D.

MEDFORD, ORE.

An old man, age 69, was brought into the hospital at 11:30 p. m. one cold autumn night. He had been in an auto accident. The car in which he was riding had gone off the road and plunged down an embankment. The driver of the car asked the old man to wait while he went for help. On returning one-half hour later the man was gone. After an hour's search he was found in the brush at the bottom of a canyon. He was first taken to a CCC Camp, where a dressing was applied to his head and then brought into the hospital, a distance of forty miles over a mountain road. He was first seen by a physician three hours after the accident.

Superficial examination revealed an old man in a state of shock and drunk. There was a deep laceration on the left side of the forehead about four inches long. The jaw was fractured with three-fourth-inch downward displacement of the central fragment. The patient was edentulous and had lost his lower plate. Crepitus could be elicited under the skin of the entire side of the chest. There were multiple scratches and bruises. There was no evidence of injury to the extremities.

Solution of case: The laceration of the forehead was sutured immediately. Since the patient was drunk he felt no pain. He was then put to bed with his clothes on and the nurse was instructed to refrain from any attempt to remove his clothing and to keep him warm with blankets and hot water bags.

Next day the patient was sufficiently recovered from drunkeness and shock for roentgen examinations. Films of the jaw, chest and lumbar spine showed two fractures through left side of the mandible with no displacement and another through the mental foramen of the right side of the mandible with three-fourths-inch downward displacement of the central fragment. The fourth to the tenth ribs on the left side were fractured. As noted already, air was present beneath the skin. The left lateral processes of all the lumbar vertebrae were fractured as was the body of the left scapula.

A body cast was applied that afternoon and there was no further treatment for three days. On the third day the patient's lungs started to fill with fluid and death from edema of the lungs seemed imminent. However, 1/150 of a grain of atropine was given by hypodermic following which the patient's breathing became normal.

Six days after the accident the patient expressed a desire to have his fractured jaw reduced. The surgeon then decided that he would be able to stand an operation under local anesthesia. On the following day, the seventh since the accident, a mandibular nerve block was attempted. The anesthesia, not being complete, was supplemented by local infiltration through the skin over the fracture. An opening was made through the skin, the mandible exposed and a drill hole made in each fragment. A silver wire was put through the holes, the fracture reduced, the wire tightened and fastened. A plaster cast was applied to fasten the mouth closed and help maintain reduction. When the cast dried, the fracture was found still displaced.

Several days later, having obtained a vitalium plate and four screws from Portland, another operation was performed, also under local anesthesia, in which the fracture was reduced and maintained in place by the plate and screws. Recovery was uneventful. However, the skin edges turned in over the plate and serum continued to ooze out of the wound.

There was difficulty in shaving because of turning in of the skin edges. Another operation under local anesthesia was performed to remedy this condition, with partial success, although a small sinus was left which discharged serum. The jaw was not painful, however. Nine months later the patient returned, saying "a screw came out, doctor." Under general anesthesia the entire plate was removed, after which the wound healed completely.

The only residual disability is a partial paralysis and drawing in of the right side of the lower lip, due to nerve injury. One other feature of this case was the sloughing of a small fragment of bone through the gum without evidence of inflammation. The other injuries healed without any difficulty.

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vaccination, far less than those of similar age groups in civilian life. This fact warranted the statement published in *The Journal* on July 18 that 'the total number of cases in the entire army has not been enough to appreciably increase the admission rate for all diseases.' By the type of editorial that has been printed, the Chicago *Tribune* has done a disservice to American medicine. Certainly by the fears it may create among soldiers now being inducted into our armed forces it will injure morale and make more difficult the task of assembling the type of force that must be assembled to meet the challenge of our enemies. The haste with which the editorial must have been prepared certainly made impossible the kind of scientific investigation on which charges such as the *Tribune* has made ought to be based."

In another section of the same issue of *The Journal* is the following report:

"A review of the work of the Rockefeller Foundation for 1941 by the president, Raymond B. Fosdick, states that 'in 1936 the laboratories of the International Health Division of the foundation developed a vaccine which provides active immunity against yellow fever after a single injection. As a result of the war emergency the demand for this vaccine has been so great that, in order to produce it in the quantities required, the foundation has had to double both its laboratory space and the number of its technicians.

" 'The distribution of yellow fever vaccine manufactured by the foundation in New York in 1941 was as follows:

	Number of Doses	
United States Army	959,300	
United States Navy	960,000	
United States Public Health Service	3,000	
Panama Canal Zone	4,000	
Virgin Islands	12,000	
Total for United States government		1,938,300
West Africa	152,000	
South Africa	158,000	
East Africa	1,662,000	
Total for Africa		1,972,380
India		222,000
Brazil		100,000
Singapore		28,000
Grand total		4,260,680

" 'In addition to these amounts the United States Army and Navy have asked the foundation to supply them with several million doses more during 1942. In all cases, both here and abroad, the vaccine is, of course, furnished without charge.' "

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING
PORTLAND, SEPT. 12-13, 1942

PROGRAM CANCELLED

After taking a poll of the opinion of the membership through the members of the Council, it has decided, because of the urgent demand upon the medical profession in the military service and in civilian practice, to limit this year's Session to meetings of the House of Delegates and the general Society to transact necessary annual business. All members are invited to attend the meetings of the House of Delegates.

PROGRAM

SATURDAY, SEPTEMBER 12

9:00 a.m.—Breakfast of the House of Delegates.
12:00 m.—Luncheon.
2:00 p.m.—Meeting of the House of Delegates.

SUNDAY, SEPTEMBER 13

9:00 a.m.—Breakfast Meeting of the House of Delegates.
10:00 a.m.—General Society Business Session and Election of Officers.

PORTLAND ACADEMY OF MEDICINE

The program of papers as prepared for the preliminary program has been cancelled, with the exception of those contributed through the courtesy of the Portland Academy of Medicine to be presented by Dr. George E. Fahr, Professor of Internal Medicine, University of Minnesota Medical School. These addresses will constitute a program by the Academy independently of the House of Delegates and business meetings of the State Society.

The subjects of these addresses are presented with the dates for which they were scheduled in the preliminary program. Notice will be duly given, if the dates of delivery are changed from those herewith included.

PROGRAM

TUESDAY, SEPTEMBER 8

Auditorium of Medical School Library Building
8:00 p. m.—"What is Congestive Heart Failure?"

WEDNESDAY SEPTEMBER 9

Auditorium of Medical School Library Building
8:00 p. m.—"The Rational Treatment of Congestive Heart Failure."

THURSDAY, SEPTEMBER 10

Auditorium of the Medical School Library Building
8:00 p. m.—"The So-Called Irritable Heart of the Soldier."

U. OF O. MEDICAL SCHOOL

BASE HOSPITAL UNIT

They're in the Army now.

University of Oregon Medical School's general hospital unit, successor to Base Hospital 46 of World War I., was called to active duty July 15. Most of the personnel of 55 doctors and 100 nurses reported to Fort Riley, Kas. From there they probably will be assigned to overseas duty.

With them the doctors took the old silken flag of Base 46. The famous colors, a bit yellowed by time spent in storage at the school, were presented to Col. J. Guy Strohm, commander of the unit, at impressive ceremonies in the school auditorium July 10. Presentation was made by Dr. Thomas M. Joyce, one-time commander of 46.

"Oregon is proud of you," Frederick M. Hunter, chancellor of the state system of higher education, told the departing doctors and nurses. And Dr. Donald M. Erb, president of the University of Oregon medical school, added his word: "During your absence the University of Oregon Medical School will carry on in its indispensable job of training future doctors and nurses for future service."

The nurses' flag of 1918 also went to Fort Riley. It was presented to Lieutenant Harriet Dickson, chief nurse of the general unit, by Miss Grace Phelps, Doernbacher hospital's recently retired superintendent, who was chief nurse of Base 46.

Associate Dean David W. E. Baird presided at the ceremonies and brief talks were given by Miss Elnora Thomson, head of the department of nursing, and Ralf Couch, administrator of hospitals.

A color guard and bugler from Barnes General Hospital at Vancouver, Wash., officiated at the flag presentation.

The occasion was somber. Mothers, wives, sweethearts, friends, all were there to officially say "God speed."

Following the ceremonies a reception was held in the library rooms. "Good luck, old man," rang out through the evening and warm handclasps were the rule.

The official roster includes the following:

Colonel J. Guy Strohm, Lieutenant-Colonel F. R. Mount, Lieutenant-Colonel Dean R. Seabrook, Major Roderick E. Beeg, Major E. M. Burns, Major S. Caniparoli, Major S. L. Diack, Major E. D. Dubois, Major J. W. Evans, Major A. H. Ilge, Major L. P. Lind, Major G. J. McKelvey, Major W. E. Nielsen, Major G. K. Smith, Major F. J. Underwood, Captain J. F. Abele, Captain Arch Diack, Captain D. E. Forster, Captain N. E. Hamilton, Captain J. B. Haworth, Captain R. T. Henry, Captain C. W. Kuhn, Captain C. E. Littlehales, Captain T. J. Mathews, Captain R. F. Miller, Captain B. N. Pease, Captain J. M. Roberts, Captain A. L. Rogers, Captain F. A. Short, Captain V. D. Sneeden, Captain J. P. Trommald, Lieutenant R. R. Carter, Lieutenant L. R. Chauncey, Lieutenant A. M. Compton, Lieutenant Hugh B. Currin, Lieutenant T. J. Fox, Lieutenant H. L. Frewing, Lieutenant H. E. Mason, Lieutenant J. L. Miller, Lieutenant W. R. Munroe, Lieutenant Leon F. Ral, Lieutenant K. J. Seales, Lieutenant A. B. Shields, Lieutenant A. W. Sullivan, Lieutenant J. E. Tuhy, all of the medical corps.

Major F. V. Lutz, Lieutenant H. M. Bigelow and Lieutenant R. B. Keller, all of the dental corps.

Captain Webster R. Linn, Lieutenant C. B. Smith of the medical administrative staff.

Lieutenant V. C. Eagan, Lieutenant D. J. Ferguson, chaplains.

Army nurse corps includes the following:

First Lieutenant Harriet M. Dickson, Second Lieutenants Arnetta A. Bartlett, Ava A. Bickner, Louise M. Boesen, Loia M. Bolin, Helen L. Bossier, L. Leota Bradley, Leila L. Branthner, Gladys M. Broberg, Dorothy Burnett, Neva

Faye Carter, Betty Ann Chase, Aileen Cronkhite, Irene M. Davis, Florence Doherty, La Vern Durbin, Lotus M. Eaton, Lois M. Elder, Elizabeth J. Farnsworth, Mildred Fehrenbacher, Kathryn Fisher, Elizabeth E. Forman, Dee M. Frederick, Elizabeth J. Gearhart, Jean L. Gilfillan, Margaret Graham, Helen N. Groshong, Evelyn M. Greslie, Roberta Griswold, Ruth B. Hall, Joelyn A. Hanford, Hazel E. Hannula, Doris B. Harris, Thelma E. Harris, Beulah V. Harrison, Mary F. Hensler, Ruby I. Hills, Nadia Hoffman, Romelia Howell, Eleanor Irvine, Dorothy W. Kearney, Susanna N. Keogh, Margaret L. Klein, Cecelia R. Kowarsch, Sara M. Lant, Jeanne J. Lonergan, Jean Ellen Loveless, Frances N. Lavin, Jean C. MacLean, Ruth Mansfield, Lorraine M. Mason, Gladys L. Matthews, Elsie M. Meister, Jeanne Menoret, Joan L. Mitchell, Edith Clair Moore, Mary Montgomery, Sara Y. Morisette, Patricia J. Murphy, Edna J. Myers, Mary J. McCarty, Jo McCulloch, Addid McKash, Viola McKee, Thelma O. Newland, Virginia J. Nickerson, Paula J. Nolting, Norma H. Olson, Ruby J. Olson, Suzanne M. Ottoy, Myrtle I. O'Boyle, Elouise Patterson, Minnie Peterson, Earline E. Price, Hazel J. Reinaas, Helen Richman, Dorothy A. Robinson, Abbie Rouse, Helen J. Sandall, Helen A. Saunders, Dorothy B. Savage, Helen E. Scott, Mildred C. Shafer, Betty Lou Stanard, Eleanora N. Staats, Alice E. Still, Marjorie A. Stout, Ethel M. Striegel, Maxine Taylor, Rena L. Troutman, Leona T. Unger, Connie K. Van Hoomissen, Alice M. Vermuellen, June R. Walsworth, Mary Louise Warner, Irene M. Wold, Elizabeth Zimmerman.

STATE BOARD OF HEALTH

Williard J. Stone has been appointed County Health Officer of the Marion County Health Department, replacing Vernon A. Douglas who is on leave of absence while serving as Medical Officer for the Oregon Civilian Defense Council.

A Ten-Day Institute On "Nursing Care Of Maternity and Newborn" was held at the University of Oregon Medical School July 20-31. Miss Evelyn Lundeen, in charge of the Premature Station of Michael Rees Hospital, Chicago, gave ten hours of lectures, demonstration and approved practice in the nursery. This institute was open to both institutional and public health nurses. Also participating in the institute were Paul V. Wooley and Howard C. Stearns of the Medical School staff, Miss Johanna Eggers, nursing supervisor of the Out-Patient Maternity Department, and John F. Belz and Miss Laura C. Harstad, both of the Oregon State Board of Health.

Warren H. Gardner, Ph. D., Consultant in Hearing and Vision with the Oregon State Board of Health, was recently elected national president of the American Society for the Hard of Hearing at a conference in Cincinnati. He succeeds James R. Garfield, son of the late president. The society is composed of hard of hearing persons, physicians and educators who are devoted to conservation of hearing and the welfare of hard of hearing adults and children. Dr. Gardner also lectured at a conference of the exceptional at Columbia University and interviewed persons regarding hearing problems at Indiana University and the University of Iowa. He is author of numerous articles in educational and medical journals.

POSTGRADUATE DENTAL EDUCATION

The Oral Health Program of the Oregon State Board of Health, in cooperation with the Oregon State Dental Association and the Oregon State Board of Dental Examiners, conducted a refresher course for practicing dentists of the state during June, just prior to the Annual State Meeting of the Dental Association. The entire series of lectures emphasized the medical problems concerned with children's dentistry, child health, growth and development, nutrition, diagnosis and treatment, and the relationship of dental disease to general health.

David Weisberger, M.D., D.M.D., Instructor in Oral Medicine at Harvard Medical School, discussed "Infections and Endocrine Disorders Affecting the Oral Cavity in Childhood," "The Role of Vitamins in Dentistry," and "Is Vincent's Disease a Symptom of Nutritional Disturbance?" Dr. Weisberger's discourse on Vincent's angina, its diagnosis and treatment, was particularly timely in view of the fact that several mild epidemics of necrotic gingivitis and hemorrhagic gingivitis have occurred in Oregon the past year. The influence of vitamin C and niacin therapy on these symptoms was discussed at length.

John C. Brauer, D.D.S., Chief of the Department of Preventive Dentistry and Pedodontia at the University of Iowa, presented the psychologic problems of child management, instruction in operative procedures used to care for foundation and permanent teeth, development and calcification of the primary and secondary dentition, and methods of oral health education of the child and parent in the office of the family dentist.

These two courses were presented on June 23 and 24, two days prior to the annual meeting of the State Dental Association. Both speakers also presented brief talks before the general assembly at the State Meeting. Dr. Nathan Sinai, Professor of Public Health at the University of Michigan School of Public Health, was present the final two days of the State Dental Meeting and spoke on dental and medical economics.

This was the third refresher course conducted by the Oral Health Program. It was a more comprehensive course than those presented in previous years and the attendance and interest shown were very satisfactory.

OBITUARIES

Dr. Sanford Loeb of Portland died June 9, aged 66 years, from cerebral vascular hemorrhage.

Dr. Grant J. Gray of Roseberg died April 27, aged 87 years, from cancer of the prostate with metastasis.

Dr. H. P. Hargrave of Medford died June 28, aged 67 years, from cerebral hemorrhage and carcinoma of the bladder.

TUBERCULOSIS SCHOLARSHIP

The National Tuberculosis Association has granted the Oregon Tuberculosis Association a scholarship for the Twenty-eighth Session of the Trudeau School of Tuberculosis at Saranac Lake, New York. The scholarship covers a four weeks course beginning September 14, 1942, and a supplementary course of two weeks at the Bellevue Hospital Tuberculosis Service in New York City, Faculty of Columbia University.

The scholarship fee granted by the National Tuberculosis Association is $100 which includes tuition for the supplementary course at Bellevue Hospital. The Oregon Tuberculosis Association will add $300 toward travel and maintenance expense. Any graduate physician interested in the scholarship may secure further details from Oregon Tuberculosis Association, 605 Woodlark Building, Portland, Oregon.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, CANCELLED FOR 1942

MEETING CANCELLED

The Board of Trustees of Washington State Medical Association, because of the war and the strenuous demands upon the physicians, has ordered cancelled the 53rd Annual Meeting of the Association scheduled to be held at the Davenport Hotel, Spokane, August 17-19.

The Board of Trustees and the House of Delegates of the Association will meet at Olympic Hotel, Seattle, September 12-13 to conduct the official business of the Association.

V. W. SPICKARD, M.D.
Secretary-Treasurer.

DIAGNOSIS NOT REQUIRED

Olympia, Wash., July 3, 1942

To the Editor:

When Initiative 141 was placed in operation in April, 1941, the interpretation placed on the Act by the Attorney General's office held that medicines and drugs were not included. In December, 1941, a decision of the Superior Court held that medicines and drugs were a necessary part of adequate medical care and should be included in the Old Age Assistance medical care program.

The State Department of Social Security is by law responsible for administering the provisions of Initiative 141. As no comparable program has ever existed in the United States prior to the present one, an effort has been made to secure detailed statistical information on all phases of the program in order that these would be available for analysis and evaluation. With this idea in mind, in planning the medical program it was felt that valuable information might be obtained concerning the amount of medication necessary in treatment of individual medical conditions, if the physician placed the diagnosis for the main condition requiring treatment on the prescription which the doctor furnished the patient.

The Attorney General's office has recently written an opinion which holds that placing a diagnosis on a prescription might be considered to be divulging profesional information. Therefore, it will no longer be required that a physician place his diagnosis on a prescription issued for Old Age Assistance cases.

John M. Flude, M.D.
Medical Supervisor, Department of Social Security

MEDICAL NOTES

Rodent Survey. The United States Public Health Service has made a survey in Eastern Washington to detering on a survey in Eastern Washington counties to determine the extent of bubonic plague infections. In 1938 and 1939 ground squirrels in Adams, Lincoln and Spokane counties were found to be plague carriers and for the first time on record cottontail rabbits were found to have contracted the disease. No deaths from plague have been noted recently in the state, in spite of finding the plague-infected fleas on rodents in the above area.

Health Center Opens. Robert W. Ripley, from Chappaqua, N. Y., has arrived in Pasco to open health center. He is a captain in the United States Public Health Service and will be assistant district health officer for Benton and Franklin counties and the western tip of Walla Walla county. He will be assisted by the present nursing staff of Franklin and Benton counties.

New Locations. W. Smick, having completed internship at Providence Hospital, Seattle, has taken the position of Cecil Burk at Roslyn, who enlisted in the Army and was stationed at Vancouver, but now has been transferred to Indio, Cal. Eugene L. Kidd, in charge of the Lewis County medical department for nearly a year, has left for Everett, where he will have charge of the health program in Snohomish County. Lloyd F. Lackie, graduate of Creighton Medical School, is now in practice at Renton. D. W. McKinley, formerly on the staff of the student hospital at Washington State College, has located in Pasco.

OBITUARIES

Dr. Walter S. Bardwell, aged 63, died in Newport July 4. He had been an invalid the past fifteen months.

Dr. Bardwell was a native of Pennsylvania and graduated from the medical department of Northwestern University in 1907. Coming west in 1912 he was for six years surgeon for the Milwaukee railroad in Othello, then practiced his profession in Spokane three years and came to Newport in 1921.

Dr. Syvert H. Johnson, aged 73, of Bellingham, died June 20. He had practiced in that city for thirty-nine years. He was born in Rushford, Minn., received his B. S. degree from Valparaiso University and his M.D. from Jefferson Medical College in 1897.

Dr. J. Edward Preucel, of Colfax, died July 13, aged 74, after an eighteen months' illness. He had practiced in Dayton, Spokane and St. John before coming to Colfax in 1927. He was a graduate of Rush Medical School and was a captain in the Medical Corps in the last World War.

Dr. Hannibal J. Blair, aged 87, died June 10 at Elma. He was a pioneer physician and believed to be the last surviving member of Washington's first state legislature.

He came to Elma in 1890 and was the city's second mayor, serving from 1891 to 1894. Later he moved to Tacoma, where he operated a drugstore for a time, and in ensuing years returned to the practice of medicine at Puyallup and Vancouver.

Dr. Frank P. Witter, of Spokane, died in Tacoma June 14. He was mayor and practiced in Rockford before he came to Spokane, where he practiced with Dr. Essig and Dr. Pope.

IDAHO STATE MEDICAL ASSOCIATION

FIFTIETH ANNUAL MEETING, SUN VALLEY, SEPT. 17-19, 1942

IDAHO STATE MEDICAL ASSOCIATION

September 17-19, Sun Valley

PAUL M. ELLIS, *President*

Although some state associations have abandoned their usual annual state meetings, and there are rumors of others following a similar course, Idaho State Medical Association will meet as announced at Sun Valley unless something at present unknown arises to prevent it. The meeting, however, will cover three instead of four days, being listed September 17-19. Arrangements at Sun Valley will be the same as last year. Accommodations will be on the American plan, with prices the same as in the past.

As previously announced, the speakers on the program are members of the faculty of University of Oregon Medical School, each one being here listed with the subjects of his address. Attention is called to addresses which will also be given by members of the asociation. The roundtable luncheon discussions of last year will not be presented at this meeting.

PROGRAM

Frank R. Menne
Professor of Pathology

1. Pathology of Lymph Nodes.
2. Pathology of the Prostate Gland.
3. Pathology of Cancer of the Stomach

Raymond E. Watkins
Professor of Obstetrics and Gynecology

1. Management of Hemorrhage in the Latter Half of Pregnancy.
2. Cancer of the Uterus.
3. Treatment of Prolapse of the Uterus.

Lyle B. Kingery
Professor of Dermatology

1. Present Status of Superficial Fungus Infections of the Skin.
2. Five-Day Treatment of Syphilis.
3. Dermatological Problems of the General Practitioner.

Joseph B. Bilderback
Professor of Pediatrics

1. Surgical Conditions of the Abdomen in Infants and Children (with Dr. Gius).
2. March of Pediatrics.
3. Vomiting in Infancy.

Edwin E. Osgood
Associate Professor of Medicine; Head of the Division of Experimental Medicine

1. Principles of Chemotherapy.
2. Differential Diagnosis of Coma.
3. Therapeutic Thinking.

John A. Gius
Associate Professor of Surgery

1. Surgical Conditions of the Abdomen in Infants and Children (with Dr. Bilderback).
2. Cancer of the Colon.
3. Considerations in Treatment of War Wounds.

Moving Picture Program

The following films will be shown before and after the regular speaking program each day. A definite schedule will probably be arranged when the final program comes out.

1. Supravaginal Hysterectomy, Arthur Curtis.
2. Vaginal Repair of Cystocele and Rectocele, Arthur Curtis.
3. Surgical Treatment of Varicose Veins and Ulcers, Gerald H. Pratt.
4. Purposeful Splinting Following Hand Injuries, Sumner L. Kock.
5. Surgical Anatomy of Genito-Urinary Tract.
6. Compound Depressed Skull Fracture, Jaeger-Denver.
7. Subtotal Thyroidectomy, Lahey Clinic.
8. Lingual Thyroid, Lahey Clinic.
9. Scalenicotomy, Ocksner-Tulane.
10. Diagnosis and Treatment, Carcinoma of Breast, F. Adair.
11. Cholecystectomy and Choledochostomy for Chronic Cholecystitis and Cholelithiasis, Lahey Clinic.
12. Hernioplasty. Modern Basic Technic, M. Gage, Tulane.
13. Loop Colostomy. Carcinoma of Rectum and Obstruction, Lahey Clinic.

Scientific Exhibits

The following exhibits have been arranged for and no doubt there will be many more.

F. M. Sprague, Boise. Movie, "Evaluation of Physical Fitness."

H. L. Schiess, Shelley. X-rays, "Sarcoma of the Pelvis."

E. V. Simison, Pocatello. Kodachromes, "E. E. N. T."

A. B. Pappenhagen, Orofino. X-rays, "Fractures."

H. E. Bonebrake, Wallace. X-rays, "Fractures."

Probably the Metropolitan Life Insurance Company's "Diabetes."

Technical Exhibitors

Shadel Sanitarium Mead-Johnson & Company
Sego Milk Company Morning Milk Company Cutters
Harrower John Wyeth & Son
Eli Lilly & Company Physicians' Supply of Salt Lake
Shaw Surgical Company General Electric

September 18, in the forenoon, lectures and demonstrations will be given by the following local members:

1. F. M. Sprague, Boise, "Physical Fitness Rating."
2. John R. Mortiz, Eun Valley, "Fractures of the Lower Leg."
3. Glenn McCaffery, Kellogg, "Injuries to the Knee Joint, Including Fractures."
4. John T. Wood, Coeur d'Alene, "Injection Treatment for Somatic Pain."

CLINICAL FORUM

OBSTETRIC PROBLEM

Mrs. E. P., aged 34, was a para-IV. She did not know the date of her last menstruation but stated she felt life at four and one-half months. Estimated date of confinement was June 20.

She had a little painless bleeding during the last trimester, which suddenly became free with the onset of labor 8:30 p.m. July 3. She entered the hospital at 1:30 p.m. July 4, flowing rather profusely. Her temperature was 99°, pulse 88, respiration 20. Her Kahn had been negative. Her general physical condition was good.

The baby's head was engaged, position O.L.A. The fetal heart tones in lower left quadrant were strong. Pelvic examination revealed a rather relaxed cutlet, an ample pelvis. Cervix was in the midline, completely effaced. The placenta could easily be felt covering about one-third to one-half of the three fingers dilated os. The membranes were bulging through the other side.

The membranes were punctured, and the head firmly engaged. As she was bleeding rather freely the vagina was packed. Her labor was allowed to progress normally. Fetal heart tones were normal. About an hour later it was observed they were becoming a good deal slower. Listening to them, one felt the suggestion that the baby was having distress for some reason. Pains were regular but made no variation in the fetal heart. Consequently, one felt from other observations the cord was not prolapsed, mother not bleeding.

Would you have conducted this case differently to this point? Or if called in consultation at this stage, what would be your method of procedure?

COMMENTS ON THE PEDIATRIC PROBLEM IN JULY FORUM

First commentator says: On account of insufficient data I do not have a diagnosis. Evidently the one presenting this problem had more information than that given, therefore considered this easy to clear up.

In a good many years practice and examination of many thousands of babies, I have witnessed very few newborns who developed jaundice of such magnitude (icteric index 200) three weeks after birth. The hemoglobin, which was not given, is quite necessary here. Hemolysis would give a lower red count. Infection would present more temperature and much higher white count. Erythroblastosis would have arrived earlier in life, and bizarre forms among the red cells would be expected. It does not seem reasonable that any kidney infection could cause so marked a jaundice with so little fever. Congenital anomalies of the liver or the bile-producing system would have been quite evident earlier in life.

Second commentator states: Being a doctor out in the sticks and having no laboratory facilities, had this case been brought to me I should never have learned anything about the icteric index nor known what it meant. Jaundice coming on so late would be a puzzler; together with the evident anemia I should be disturbed as to the outcome. Careful questioning of the parents would probably elicit the fact that a persistent yellow stain on the diaper was present, suggestive of pus in the urine. If cooperation by the parents worked, then finally a specimen could be obtained and examination would complete my disturbed observation. My diagnosis would be that some blood dyscrasia was present. If a hospital was available (and one is to almost all doctors in the Northwest) I would refer the child to the institution, to its pediatrician for treatment.

Conclusion of case: While there are three important sources of jaundice in the newlyborn group, there is only one which appears after the first week, infection usually with the colon bacillus. This diagnosis was confirmed by isolating the bacillus from the blood and urine. It is probably the same syndrome as was described by Winckel and now bears his name. The treatment of choice is frequent small transfusions and the use of adequate doses of sulfon drugs. These were given in the case described but the child progressed along a downhill course, began to convulse on the third hospital day, and died on the fourth. Early recognition is imperative to attain a satisfactory outcome and the nature of the process should be suspected whenever a healthy newly born babe becomes severely jaundiced later than the first week of life.

There are a few other points that might need emphasis. The presence of clay-colored stools in a small child does not necessarily mean an obstruction of the bile ducts, since the bile capillaries in the liver are rather easily blocked in any process causing liver damage or putting an increased load on the liver, just a red herring. Possible portals of entry for a colon bacillus that deserve mention are (1) the umbilicus, (2) the urinary tract, especially if an anomaly exists, and (3) recent circumcision wounds.

BOOK REVIEWS

Disability Evaluation. Principles of Treatment of Compensable Injuries. By Earl D. McBride, B.S., M.D., F.A.C.S. Assistant Professor in Orthopedic Surgery, University of Oklahoma School of Medicine, etc, Three hundred Seventy-four Illustrations. Third Edition, Revised. 631 pp. $9. J. B. Lippincott Co., Philadelphia, 1942,

This book is particularly interesting to physicians, whose duties lie in the field of evaluating properly permanent and partial disabilities that follow accidents. In the face of so many accidents involving permanent partial disabilities their evaluation has been on a more or less makeshift basis. The award to injured workmen coming under the jurisdiction of the state department of labor and industries or under an insurance carrier should be based on accurate estimation of the disability. Many times a disability award is based on the personal opinion of the examiner rather than on carefully correlated data. This is true not because of the intent of the examiner to work an injustice, but there has been insufficiency of training in measuring and rating disability cases according to a proper yardstick. The author has gone into this subject with considerable care. He carefully defines and explains most of the usual disabilities and deformities.

Also a series of tables are presented which cover the various injuries and disabilities generally met with among injured workmen and they take into consideration various factors determining degrees of disability, such as delayed action, diminished endurance, weakness of lifting power, etc. Thus has been worked out a functional measuring rod. By applying a few simple findings, a disability can readily be estimated in terms of percentage.

The book is beautifully and generously illustrated, showing many types of injuries and disabilities. For most of these an outline of standard treatment is appended. This book is heartily recommended as an excellent source of information for those wishing a ready and accurate reference in disability evaluation. J. K. Holloway

Principles of Extraperitoneal Cesarean Section. By James V. Ricci, A.M., M.D., Associate Professor of Gynecology and Obstetrics, New York Medical College, etc., and James Pratt Marr, M.D., F.A.C.S., Associate Attending Surgeon, Woman's Hospital in the State of New York, etc. 224 pp. $4.50. The Blakiston Co., Philadelphia, 1942.

This book is most carefully prepared and printed, with excellent diagrams, drawings and illustrations. The text is well written and readable. A most careful cross index has been supplied. It is important to obstetricians, if for no other reason than the authors' categorical statement that the Physick-Sellheim technic, because of its ability to prevent peritonitis, should supplant Porro section and craniotomy and, in fact, all other types of cesarean section in infected or mismanaged cases.

The authors base their claim on a series of over fifty operations done according to this technic without serious injury to bladder or ureters. This is surely an adequate series, when we remember the epoch-making monograph of Saenger based on a single case which gradually completely changed the obstetric practice of his day in favor of suture of the uterine incision in cesarean section.

There is little doubt that all peritoneal exclusion operations are the province of the obstetric surgeon of more than average skill and training. Because of their technical difficulties they will never appeal to the forceps obstetrician, however experienced he may be in that type of delivery. This book is quite worthwhile from the standpoint of medical history alone as regards the development of the operation of cesarean section. R. E. Stewart.

The Eye Manifestations of Internal Diseases. By I. S. Tassman, M.D., Associate Professor of Opthalmology, Graduate School of Medicine, University of Pennsylvania, etc. With 201 illustrations including 19 in color. 542 pp, $9.50. The C. V. Mosby Company, St. Louis, 1942.

This volume covers the subjects intended in a very comprehensive fashion, which it is stated should prove of interest to the opthalmologist and all other practitioners. The first five of the twenty-three chapters discuss structural abnormalities, also including examination of the patient and the iris. There is consideration of ocular manifestations found in important hereditary and familial diseases, and also those of infections and infectious diseases. There is even a chapter devoted to occurrence of drug and chemical intoxications. Chapters deal with eye manifestations of nearly every disease, from those of the cardiovascular system to those affecting bones of the skull. One criticism might be made that the volume is almost too comprehensive, including descriptions of eye conditions which are not really manifestations of internal diseases together with general diseases which have no particular or specific eye manifestations. The illustrations are new and pertinent to the subject. The reader will find useful suggestions whether he be an opthalmologist or general practitioner.

W. F. Hoffman

Sex Education in High Schools. By John Newton Baker, Assistant Professor of Sociology, Virginia Polytechnic Institute. 155 pp, $2. Emerson Books, Inc., New York, 1942.

The question of sex education for youths has been subject to much controversy. The author cites an appaling number of children born to unwed mothers from the ages of ten to nineteen years. Reference is made to the astonishing number among girls from the sixth school grade. Although it may be claimed that such information should be given by parents, for the most part this seems to be ineffectual training. Some think that this instruction should be given in the secondary schools, while others would defer it until the college age. It is noted that the majority of high school students do not attend college, and information as to sex should be imparted not later than high school age, according to many advocates. This book summarizes the methods in many states, including typical courses of sex education as presented in high schools. One interested in this form of education will find useful suggestions in this book.

War Gases, Their Identification and Decontamination. By Morris B. Jacobs, Ph. D., Food, Drug and Insecticide Admin. U. S. Dept of Agr. 1927, etc. 180 pp, $3. Interscience Publishers, Inc., New York, 1942.

Many articles have been published in medical journals descriptive of poison gases and methods of counteracting them and treatment of patients whom they have afflicted. The author of this book says that its aim is to present these subjects so that the information will be useful to the gas identification officer, war gas chemist, decontamination officer and health officer. The first portion of the book is devoted to description of the physical characteristics and psychologic response of war gases, with their effect on material, water and food. Confirmatory tests are described for each gas under consideration. Special emphasis and detailed description are presented under decontamination. Medical treatment of afflicted patients is not considered in this volume.

Medical Applications of the Short Wave Current. By William Bierman, M.D., Attending Physical Therapist, Mount Sinai Hospital, New York City, etc. Second Edition. 344 pp, $5. The Williams & Wilkins Company, Baltimore, 1942.

Use of the short wave current has become more or less universal among specialists and general practitioners. There has been a controversy as to whether the effect of this agency is due entirely to heat or is also the result of some specific electric effects. The author believes heat is the sole effective influence. The physics of the short wave current are described, as well as the physiologic responses to local heat. Under clinical considerations are presented technical methods with which every operator should be familiar. After discussing fever therapy, about half of the volume is devoted to clinical applications. Every physician employing this agency should be familiar with the details herein described. They are applied to all bodily systems, with special details for separate diseases and methods of application to different organs. Illuminating illustrations add to the efficiency of the text. Injury may be inflicted on a patient by use of this agency unless directed by specific knowledge and experience.

Urology In War. Wounds and Other Emergencies of the Genitourinary Organs Surgical and Medical. By Charles Y. Bidgood, Lt. Comdr., (M.C.) U.S.N.R. 78 pp., $2. The Williams & Wilkins Co., Baltimore, 1942.

This manual has been prepared as a practical guide to medical officers in the field or at isolated stations who are called upon to deal with war emergencies relating to the genitourinary tract. Its scope is limited to acute traumatic and inflammatory lesions. There are chapters on bladder dysfunction after cerebrospinal injury, anuria, inflammatory, acute nontraumatic and noninflammatory lesions. Preparation for urologic operations are by associate authors. The eight brief chapters deal in a concise manner with many urologic problems possible to war casualties. The majority of the illustrations are by the distinguished artist, Mr. William P. Didush. The manual should serve admirably the purpose for which it is designed. F. J. Clancy

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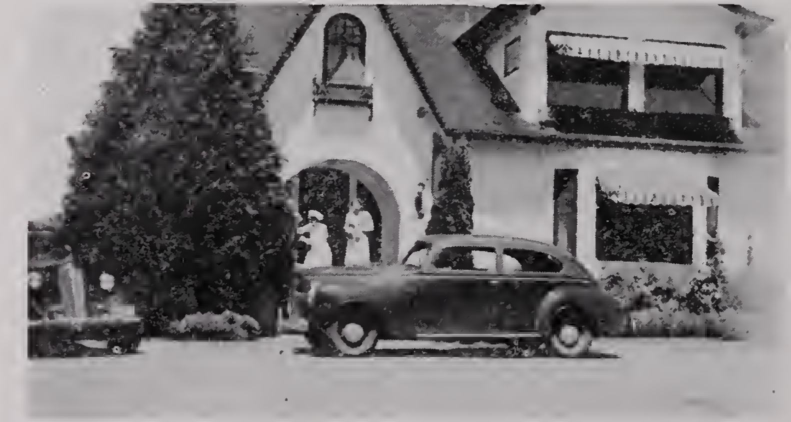

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

THE PHYSICIAN GOES TO WAR

Recent information from the War Department indicates that Medical Officers are urgently needed to provide medical care for the Army Personnel. The call to duty of approximately 3500 per month for the remainder of the calendar year will be required to meet the requirements of the Army in the war effort. The great need is for physicians under age of forty-five who are qualified for active duty. Physicians and dentists appointed in the Medical Corps and in the Dental Corps, Army of the United States, will be given a period of training, and subsequently assigned to duties appropriate to their qualifications and educational background.

Courses will be established in certain universities and military establishments to give instruction in neurosurgery, surgery of the extremities, tropical medicine, epidemiology, venereal disease control and in several other subjects as postgraduate training for physicians needed for duty in such specialties.

The expansion program of the Army Air Forces now in progress will require between 1000 and 1200 physicians per month for the remainder of the calendar year. The basic qualifications for duty are the same as required for other branches of the Army. However, because of diversified duties and necessary mobility, the predominant need is for physicians under the age of thirty-seven who are qualified for full military duty, since the Air Force physician will frequently be called upon to meet situations taxing to the utmost his ingenuity and ability.

Physicians in the younger age group, who are qualified for limited duty only, will be accepted for duty for the Air Force, their qualifications and training usually designating the type of duties to which they will be assigned. The remainder of the vacancies in large part will be filled by physicians from the older age group. Physicians in the younger age group have the opportunity of postgraduate training in numerous specialties, and when completed may be designated as Flight Medical Examiner and Flight Surgeon after one year.

All branches of the Army Medical Corps offer every qualified physician an opportunity not only to practice his profession, but to aid in the defense of his country, the preservation of his family, his home and the institutions of this great nation which have been so generous to us.

DISPOSITION OF COMMISSIONED PHYSICIAN'S PRACTICE

One of the most serious problems confronting the commissioned physician is disposition of his practice. To whom shall he refer patients? Can he anticipate their return to him at the end of war service? The business of the physician differs from that of the man engaged in commerce who has assistants who will care for the business during his absence. The physician's practice is based on recognition of his professional ability, sustained by the confidence and affection of his patients. Ordinarily, an absence for the probable period of war will not dissipate these professional relationships, and he can reasonably anticipate resumption of his previous practice on return from his patriotic, temporary sacrifice of his professional work.

Much anxiety, however, has been expressed by many physicians that during their absence other doctors will acquire their practice and attach the patients who have hitherto been faithful to them. A correspondent is much disturbed over another phase of practice based on absence of those who have been called into war service. He notes the inclination of men, having been rejected for physical disability, who leave their existing fields of practice and move to larger cities, with the hope and expectation of acquiring the practice of men who have joined the armed forces.

He contends that these physically disabled physicians have a patriotic duty equal to the well and physically fit who, if they enter the field of commissioned doctors, should do so with the distinct understanding that they will return to their former fields of activity at the termination of the war. Otherwise, such doctors display a desire to better themselves at the expense of patriotism of others. This phase of substitution for the absent medical officers might well engage the attention of the medical profession. Regulation of these relationships between local practitioners, doctors absent in the army or navy service and the public from whom come their clienteles, should be determined by just considerations of the rights and privileges of all concerned.

REFRESHER COURSE FOR THE GRADUATE NURSE

While the shortage of medical men for war service has been greatly emphasized of late and much pressure has been put forth to enroll available members of the medical profession, whose services are essential for victorious termination of the war, at the same time there exists a similar urgency for enrollment of war nurses. Their services in war engagements are an absolute necessity and they must be enrolled in adequate numbers. To supply the shortage, announcements have been made of the establishment in various colleges and universities of courses for training nurses' aids, whose activities will be assigned to the home front and their services will be most acceptable in view of large numbers of trained nurses being engaged in war endeavors.

Also a source for relief of the shortage of trained nurses is to be found among graduates who have retired from active nursing for a longer or shorter period of years, being engaged in household duties or other occupations diverse from nursing. It is equally true with the nursing profession as in medical practice that recent years have introduced so much new knowledge concerning disease and care of patients that those in either profession who have been retired for a period of years cannot adequately resume practice without suitable instruction in recent methods, to gain familiarity with drugs, medical procedures and surgical technic developed within recent time.

In order that the graduate nurse may familiarize herself with modern advances in the nursing profession, larger hospitals in some of our cities have set up refresher courses for instruction of those who desire to equip themselves in up-to-date nursing methods. Covering a suitable period of weeks for instruction, the nurse is given the opportunity to observe and practice the newer principles of nursing in the hospital at the bedside under supervision of competent instructors.

This is a form of service that should appeal to retired graduate nurses who wish to do their part in serving their country in the present emergency. Many of these nurses are wives of doctors who have gone into Army or Navy service. When home duties permit it, this form of service should particularly appeal to these who are in close contact with professional activities. This should be a course of action well worthwhile considering on the part of women capable of engaging in this useful work.

ASSIGNMENTS FOR ALIEN PHYSICIANS

The editorial in the last issue of this Journal which discussed alien physicians has elicited some comments. One correspondent believes that these physicians, who undoubtedly possess medical knowledge that ought to be advantageously employed, might be assigned to some appropriate engagement in the military services of the United States Army or Navy. It is suggested they might be allocated to service under conditions where there could be no opportunity of any form of disservice. Satisfactory demonstration on their part of medical ability and evidence of their desire to serve their adopted country might be a preliminary to subsequent introduction into civil practice. It might be of real advantage for suitable authorities to investigate the possibility of thus utilizing the services of these applicants for enrollment in the ranks of the medical profession of this country. Certainly, consideration of the shortage of an adequate number of medical men for war service should direct official attention to available medical men not engaged in actual medical practice.

DOCTORS IN THE COMICS

In following the antics of the comic page heroes and heroines one wonders where the creators of these thrillers get their conception of doctors and the medical profession as a whole. Undoubtedly there are villains among us, but some of the better known comic serials never run out of scheming, blood-thirsty medicos. Children especially constitute the large proportion of readers and the impressions they get from the unfavorable light in which most doctors are presented in their sinister escapades must indeed be unfavorable. It could well be that certain groups utilize these grotesque smears for propaganda purposes, hoping by such underhand methods to discredit the profession generally. The old adage about believing nothing that you hear and only half of what you see was never more true. At any rate, there are apparently no more funny paper heroes in our profession.

ERRORS IN WASHINGTON LISTING

In the list of men in war services as published in last month's journal, errors unwittingly appeared in the Washington list. The following names were given of men in Army service who should have appeared as being in the Navy:

Backman, V. G., Pasco
Calhoun, E. L., Hoquiam
Carney, J. L., Seattle
Davidson, W. M., Seattle
Deppe, E. F., Seattle
Fletcher, R. H., Seattle
Flynn, J. R., Tacoma
Foster, R. F., Seattle
Friend, L. R., Bothell
Guyer, E. C., Seattle
Haven, Hale, Seattle
Kalez, W. M., Spokane
King, H. G., Seattle
Kretzler, H. H., Edmonds
Ramsay, J. F., Seattle
Rew, W. B., Yakima
Rose, H. W., Seattle
Shaw, J. W., Seattle
Skinner, J. W., Seattle
Standard, J. F., Seattle
Welsh, C. L., Seattle

CONFERENCE ON VENEREAL DISEASE CONTROL NEEDS IN WARTIME

A conference on venereal diseases and America's war effort will be held in Hot Springs National Park, Arkansas, October 21-24, with headquarters at Arlington Hotel. There will be discussions by high ranking medical officers of the War and Navy Departments, prominent physicians, health officers and others. The conference will be held under auspices of the United States Public Health Service, in conjunction with the eighth annual meeting of the Neisserian Medical Society. State and local health officers, venereal disease control officers, practicing physicians and all others engaged in venereal disease control activities are urged to attend. Surgeon General Thomas Parran will preside.

AMERICAN COLLEGE OF PHYSICIANS

The 1943 session of American College of Physicians will be held in Philadelphia April 13-16. Heretofore the College has held a five-day session, but this meeting will be condensed to four days to conserve time and expense of the members. Dr. James E. Paullin of Atlanta, president of the College, will have charge of the program of general sessions and lectures.

INCIDENCE OF JAUNDICE IN ARMY DECREASING

The incidence of jaundice in the army, following vaccination against yellow fever, is decreasing, *The Journal of the American Medical Association* announces in its August 8 issue. The announcement says:

"As *The Journal* goes to press it may be announced that the incidence of cases of jaundice following vaccination against yellow fever is decreasing. Since such cases first appeared, investigators of the highest repute in the fields of epidemiology, pathology, infectious diseases and viruses have been intensively engaged in a study of the factors concerned. There is in the minds of those familiar with the situation the firm conviction that the condition concerned certainly *is not yellow fever*. There seems to be no reason to believe that it is yellow fever or any abortive or mild form of that disease. The vaccine concerned gives actual protection against yellow fever. Only a few batches of vaccine seem to have been involved, although obviously many thousands of men were inoculated with material from each batch. The investigators feel that the technic of preparation now in use will be followed shortly by a discontinuance of new cases. It must be remembered, however, that the incubation period may be months in duration. The jaundice concerned has not noticeably affected the civilian population. An official statement in the form of an army medical department circular will be issued in the near future."

ORIGINAL ARTICLES

HYPERTENSION

FOLLOW-UP STUDY OF 481 PATIENTS*

ROBERT L. KING, M.D.
THOMAS CARLILE, M.D.
JOHN M. BLACKFORD, M.D.
SEATTLE, WASH.

Hypertension has demanded recognition as an important syndrome which contributes to great morbidity and is closely associated with a great proportion of deaths attributed to cerebral accidents and renal and cardiac failure. It is generally agreed that a prolonged abnormal elevation of human arterial blood pressure is associated with abnormal cardiovascular changes which, in the majority of instances, are important factors in the cause of death of these individuals. In general, the significance of an abnormally high blood pressure is proportional to the degree of elevation when the individual is at rest. Furthermore, it must be recognized that a permanent reduction of the blood pressure is probably a favorable achievement.

Whatever may be the cause of hypertension, the associated pathologic physiology seems definitely to influence longevity. Increasing interest in this subject has fostered many investigations which have afforded much important information, especially in regard to etiology. At present, we can probably anticipate or hope that the cause of hypertension in human beings will soon be known and we may be afforded more satisfactory means of therapy.

Numerous groups of individuals with abnormal blood pressures have been studied, but few actual follow-up statistics have been compiled. The variations in the sources of the material, the criteria of the various classifications, and the differences in the periods of observation have rendered a comparison of these data almost impossible. Several follow-up studies similar to ours were found in the literature and served for comparison with our data.

Janeway[1] (1913) found an incidence of 11 per cent of hypertension (165 mm. systolic or over) among his private patients. Of 458 patients considered to have permanent hypertension, 59 per cent were males, 41 per cent females. The average duration of life after the appearance of symptoms associated with hypertension was four years for the men and five years for the women. One-half the patients were dead in the first five years, an additional one-fourth in five to ten years, and the remaining one-fourth after ten years.

Paullin[2] (1926), in reviewing a series of 76 unselected cases of hypertension (175 mm. systolic or over) who were under observation five to seventeen years, found the male mortality rate to be 48.7 per cent; that for females 9.2 per cent.

Hamman[3] (1928) found the incidence of hypertension (150 mm. systolic or over) to be 9 per cent among 8,000 private adult patients. He reported a total mortality of 30 per cent at the end of five years; 78 per cent at the end of ten years.

Rice[4] (1933) studied 327 private patients with definite hypertension who were observed from five to ten years. There was a predominance of males. The average ages were approximately the same. Thirty of his patients (9.2 per cent) were dead in ten years.

Palmer and Thorp[5] (1936) studied 224 cases of essential hypertension and classified them according to the severity of the hypertension and the associated cardiovascular changes. Thirty of their patients lived ten years or longer. They concluded that essential hypertension is more serious in males past the age of forty-five while the severest forms, especially malignant hypertension, were more common in females.

Keith, Wagener and Barker[6] (1939) studied 219 cases of essential hypertension, classified according to the stage of arterial changes observed on fundoscopic examination combined with other features. They found but 19 of their patients to be alive 5 to 9 years after the first observation.

Schroeder and Steele[7] (1939) reviewed 216 patients under observation during the preceding ten years and classified them according to etiology. The average duration of life for the living patients varied from 5.6 to 9.4 years, of those dead 5.8 years to 6.9 years. The highest mortality, 62 per cent, had occurred in the "renal group" and the lowest,

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*From the Department of Internal Medicine, The Mason Clinic, Seattle, Wash.

*Read in abstract before the Annual Meeting of American Heart Association, Atlantic City, N. J., June 5, 1942.

[1] Janeway, T. C.: Clinical Study of Hypertensive Cardiovascular Disease. Arch. Int. Med., 12:755-798, Dec., 1913.

[2] Paullin, J. E.: Ultimate Results of Essential Hypertension. J.A.M.A., 87:925-928, Sept. 18, 1926.

[3] Hamman, L.: Prognosis of Hypertension. Atlantic M. J., 31:472-480, April, 1928.

[4] Rice, L.: Arterial Hypertension; Study of 327 Patients Observed for Five to Ten Years. South. M. J., 26:144-150, Feb., 1933.

[5] Palmer, R. S. and Thorp, E. G.: Clinical Considerations in Regard to Etiology, Characteristics and Prognosis of Essential Hypertension at Different Ages; Review of 224 Cases. New England J. Med., 214:1019-1022, May 22, 1936.

[6] Keith, N. M., Wagener, H. P., and Barker, N. W.: Some Different Types of Essential Hypertension; Their Course and Prognosis. Am. J. M. Sc., 197:332-343, March, 1939.

[7] Schroeder, H. A., and Steele, J. M.: Studies on "Essential" Hypertension; Classification. Arch. Int. Med., 64:927-951, Nov., 1939.

11 per cent in the "hypertensive diencephalic syndrome" group.

Blackford, Bowers and Baker[8,9] (1930, 1932) concluded from a follow-up study of 200 patients with hypertension after five to eleven years that hypertension is more frequent among women (65 per cent) but is more serious in males (mortality 70 per cent). From these studies, certain ideas have developed regarding the prognosis of patients who have hypertension. The prognosis in general is not good, although there are numerous exceptions, especially among women. It was on account of this grave outlook in the minds of most clinicians that we decided to make another check on a group of unselected cases. We wished to compare our results with those of previous authors and more directly compare certain features of a group of patients of The Mason Clinic who were observed to have definite hypertension from June 1, 1924, to 1930 with those of a previous group studied from 1918 to 1924.

MATERIAL STUDIED

The records of 18,074 newly registered patients at The Mason Clinic between the dates of June 1, 1924, and January 1, 1930, were individually examined. All those who had a general examination and a blood pressure reading of 175 systolic or above, or a diastolic reading of 100 or more, were included in this study (table 1).

Less than half these patients presented themselves to the physician on account of symptoms of hypertension. In the majority, the discovery of hypertension was incidental to the study of other complaints. Most of the patients should be considered as being in ill health, as compared to other groups, such as insurance applicants, policyholders, college students, or those in whom the presenting complaints are solely attributed to hypertension. The patients, as a group, represent the middle class, there being practically none of the indigent class and a normal incidence of the wealthy. The examinations were made from a diagnostic point of view by a small group of internists and their associates. All necessary methods were available and liberally used.

RESULTS

Seven hundred and ninety-four patients were found to have hypertension of an unquestioned level. This represents an incidence of 11 per cent of the patients having general examinations (table 1),

TABLE 1 — *Incidence and Mortality According to Age, Sex and Height of Blood Pressure*

SAMPLE SERIES (3,000 cases)	TOTAL			Average Age at Examination			0–9			10–19			20–29			30–39			40–49			50–59			60–69			70–79			80–89			Age Unknown		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
All patients	1591	1409	3000																																	
Percentages	53%	47%	.....																																	
General Examinations	466	649	1115	43.8	38.5	40.5	4	2	6	15	32	47	75	168	243	100	155	255	115	143	258	91	93	184	45	44	89	16	12	28	5	0	5	27	27	54
Percentages	41.8	58.2	.....	.....	.....	.....	.9	.3	5.4	3.2	4.9	4.2	16.1	27.4	21.8	21.4	23.9	22.8	24.7	22	23.1	19.5	14.3	16.5	9.7	6.8	8	3.4	1.9	2.5	1.1	.....	.4	5.8	4.2	4.9
HYPERTENSION SERIES (794 cases)																																				
*Group I	128	197	325	55	55	55	.....	.....	.....	2	0	2	6	5	11	9	20	29	22	39	61	36	51	87	37	56	93	13	24	37	2	2	4	1	0	1
II	151	199	350	56	53	54.5	.....	.....	.....	0	1	1	6	3	9	16	21	37	26	39	65	43	73	116	43	54	97	14	8	22	2	0	2	1	0	1
III	50	69	119	53	53	53	.....	.....	.....	.....	.....	.....	1	4	5	4	11	15	15	10	25	14	17	31	13	19	32	2	8	10	0	0	0	1	0	1
Totals	329	465	794	.....	.....	.....	.....	.....	.....	2	1	3	13	12	25	29	52	81	63	88	151	93	141	234	93	129	222	29	40	69	4	2	6	3	0	3
Percentages	41.4	58.6	.....	.....	.....	.....	.....	.....	.....	.6	.2	.4	4	2.6	3.1	9	11	10.2	19	19	19	29	30.3	29.5	29	27.7	28	9	8.6	8.7	1.2	.4	.8	.9	.....	.4
FOLLOW-UP SERIES (481 cases)																																				
Patients Living 10 Years or More (128 cases)																																				
Group I	26	35	61	49	51	50	.....	.....	.....	2	0	2	0	1	1	3	5	8	7	10	17	8	8	16	5	10	15	1	1	2	.....	.....	.....	.....	.....	.....
II	13	39	52	44	49	47.7	.....	.....	.....	.....	.....	.....	2	1	3	3	8	11	5	8	13	0	14	14	3	8	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
III	1	14	15	40	54	53	.....	.....	.....	.....	.....	.....	.....	1	1	.....	1	1	1	1	2	.....	6	6	.....	4	4	.....	1	1	.....	.....	.....	.....	.....	.....
Totals	40	88	128	47	50.5	49.5	.....	.....	.....	2	.....	2	2	3	5	6	14	20	13	19	32	8	28	36	8	22	30	1	2	3	.....	.....	.....	.....	.....	.....
Percentages	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	1.6	5	3.4	3.9	15	16	15.6	32.5	21.6	25	20	31.8	28.1	20	25	23.4	2.5	2.3	2.3	.....	.....	.....	.....	.....	.....
Dead Patients (353 cases)																																				
Group I	55	69	124	58	61	59.7	.....	.....	.....	.....	.....	.....	3	.....	3	3	2	5	7	7	14	13	18	31	16	24	40	10	17	27	2	1	3	1	0	1
II	90	77	167	58	57	57.6	.....	.....	.....	.....	1	1	1	.....	1	4	1	5	13	11	24	30	32	62	31	27	58	9	5	14	1	0	1	1	0	1
III	35	27	62	51	51	51	.....	.....	.....	.....	.....	.....	0	3	3	4	6	10	10	4	14	11	4	15	9	5	14	1	5	6	.....	.....	.....	.....	.....	.....
Totals	180	173	353	56.7	57.7	57.1	.....	.....	.....	.....	1	1	4	3	7	11	9	20	30	22	52	54	54	108	56	56	112	20	27	47	3	1	4	2	0	2
Percentages	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.6	.3	2.2	1.7	1.9	6.1	5.2	5.7	17	12.7	14.7	30	31.2	30.6	31.1	32.4	31.7	11.1	15.6	13.3	1.7	.6	1.1	1.1	.....	.6
Total Mortality Rates:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	33.3	66.6	50.0	58.3	64.7	39.1	50	69.8	53.7	61.9	87.1	65.9	75	87.5	71.8	78.9	95.2	93.1	94						

*Group I: Moderate— $\frac{174-200}{100}$; Group II: Marked— $\frac{201-220}{101-120}$; Group III: Extreme— $\frac{220+}{120+}$

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[8] Blackford, J. M., Bowers, J. M., and Baker, J. W.: Follow-up Study of Hypertension. J.A.M.A., 94:328-333, Feb. 1, 1930.

[9] Blackford, J. M. and Wilkinson, J. N.: Hypertension; Study of 202 Cases Followed for Average of Ten Years, With Remarks on Causes and Treatment. Ann. Int. Med., 6:54-59, July, 1932.

and is more than twice the incidence observed by Blackford et al.

In both studies the incidence of general examinations and the age and sex incidence were determined by a sample study. This was done by determining the age, sex and number of general or other examinations of 3,000 patients who were seen during the period studied, an equal number of samples being taken from each year (table 1).

Sex. Of the 794 patients who had hypertension, 329 (41.4 per cent) were males and 465 (58.6 per cent) females (table 1). The percentages correspond closely to those of patients having general examinations during the same period (42 per cent male, 58 per cent female). If we consider that there are approximately the same number of males as females of the hypertension age (40-70), then we find that the number of females who have hypertension is greater, the ratio being approximately 3:2. Blackford found that 65 per cent of the patients in his series who had hypertension were females and 53 per cent of the general registration were females.

Age. Our series consists almost entirely of adults, only three patients being under the age of 20 (table 1). The seventh decade contained the greatest number of patients. Three-fourths of the entire group were in the fifth, sixth and seventh decades of life, and females predominated in each group. In the sample group of general examinations there was a greater number of females examined in each decade until the fifth; afterwards the incidence was approximately equal for each sex. This further emphasizes the greater incidence of hypertension among females.

Classification. The 794 cases of hypertension were divided into three groups according to the height of the blood pressure (table 1) as follows:

Group I: Moderate increase in blood pressure, systolic readings above 175, diastolic readings 100 or less.

Group II: Marked increase in blood pressure, systolic readings 201 to 220, diastolic readings 100 to 120.

Group III: Extreme readings, above 220 systolic, 120 diastolic.

This method of grouping was used for two reasons: (1) it complies with the grouping of the preceding study; (2) these patients were initially examined before the more general use of the fundoscopic examination as a means of study and classification.

Fluctuations of blood pressure readings were frequently noted but there was rarely a normal reading. When repeated readings were made, none were found to be persistently normal. There was some tendency to fluctuations of readings between groups I and II, but once a patient developed an extreme reading, fluctuations, especially of the diastolic pressure, were less evident. It would not be amiss to consider groups I and II together; however, they have been kept separate on account of some interesting variations.

From the clinical viewpoint it appears that the height and duration of the blood pressure, especially the diastolic reading, are among the important features of hypertension influencing one's opinion as to the prognosis, and we are apt to be governed by these factors in some degree in advising our patients. Most physicians do not have at their command all the methods of gaining the desired data and it would be helpful, if we could rely upon the manometric readings for guidance in considering the prognosis. Furthermore, it is thought that the progress of hypertension may be retarded by producing a lower level of blood pressure, and this seems to be the aim of most therapy. Our faith in our ability to prolong the life of the hypertensive patient, for the present at least, leads us along the direct course of reducing the blood pressure.

We recognize that the arterial pressure is abnormal, far below the minimum levels of 175 systolic and 100 diastolic used in this study. Cases with less abnormal readings were discarded in order to eliminate doubtful and borderline cases which might show a temporary abnormal height. Hines and Lander[10] state that the nervous tension incident to the initial physical examinations may constitute a test for hypertension somewhat comparable to the cold water test and individuals demonstrating even slightly abnormal elevation should be considered hypertensive or hyperreactors. He found that patients whose blood pressure was found to be in the upper range of normal (140 to 160 systolic and 85 to 100 diastolic) at their initial examination were apt to have hypertension when reexamined ten or twenty years later.

ETIOLOGY

All patients with blood pressure readings of 175 systolic or 100 diastolic were included in this study. The number of cases of acute and chronic glomerulonephritis, polycystic disease of the kidneys, urinary obstruction and other causes of hypertension were not recognized with sufficient frequency materially to affect the statistics. Nevertheless, an

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[10] Hines, E. A., Jr. and Lander, H. H.: Factors Contributing to Development of Hypertension in Patients Suffering from Renal Disease. J.A.M.A., 116:1050-1052, March 15, 1941.

	A				B							
	Total Series				*Follow-up* 10-16 *Years*							
					I		*II*		*III*			*Per cent*
	I	*II*	*III*	*Total*	*L*	*D*	*L*	*D*	*L*	*D*	*Total*	*Mortality*
Renal	26	43	32	101	4	14	3	28	2	23	74	87.1
Cerebral[1]		1		1			1				1	0
Cardiovascular	72	75	29	176	3	28	1	31	2	9	74	91.9
Endocrine[2]	30	10	4	44	8	11	2	5	0	2	28	64.2
Unknown (Essential and Malignant)	197	221	54	472	46	71	45	103	11	28	304	66.4
TOTALS	325	350	119	794	61	124	52	167	15	62	481	

Table 2. Classification of 794 cases of hypertension mortality for various associated etiologic factors.
1. Anxiety states and diencephalic stimulation not included.
2. Menopause not included.

attempt was made to classify these unselected cases of hypertension according to etiology. The classification suggested by Page[11] was used (as shown in table 2A). We believe that, if these patients had been studied with the advantage of present day attitudes, knowledge and interest, a more intensive study would have developed more etiologic factors. All cases in which the cause was unknown were regarded as essential or malignant hypertension. Approximately 60 per cent (59.4) were so assigned. All cases demonstrating blood pressure readings of the levels already specified were included, regardless of associated or possible causative factors. The influence of apparent etiologic factors on prognosis is shown (table 2B).

We recognize the possible inaccuracy of assigning these etiologic factors to patients initially studied years before and have observed certain limitations. The observations recorded at that time and subsequently permit the assignment of factors only in certain instances; in others such an attempt is futile. We did not attempt to designate etiologic factors in certain instances, notably anxiety, diencephalic stimulation and menopausal states. These were arbitrarily placed in the group of unknown etiology; also, we were not able to separate cases which may have been malignant from others which have progressed into severe hypertension. These have all been placed in the group of unknown etiology.

Three patients had acute nephritis; two recovered and one could not be found. One hundred and one patients had definitely abnormal urinary findings; many of them had some impairment of renal function. We believe that these findings are those of hypertension rather than primary renal disease. The same interpretation applies to those with heart failure and angina pectoris.

FOLLOW-UP STUDY

A follow-up study was made ten to sixteen years after the initial examination. Information was obtained by questionnaires mailed to the patients, to their relatives or to their physicians; by subsequent examinations; and by a complete review of the vital statistics of this state, a courtesy accorded us by the local city and state health authorities. We were able to obtain information regarding 60.6 per cent (481) of the 794 patients, 45.3 per cent (218) of whom were males and 54.7 per cent (353) females (table 1). The sex incidence in the follow-up is approximately the same as in the total series (males 41 per cent, females 59 per cent).

Of the 481 patients, the majority were reexamined at varying intervals after the initial examination. Many of the patients have, for one reason or another, been under close observation for years.

Three hundred fifty-three (73.4 per cent) of the patients were found to have died, and 128 (26.6 per cent) were known to be living. These two groups will be considered separately and to some degree comparatively.

LIVING PATIENTS

One hundred twenty-eight patients were found to be living ten to sixteen years after our initial observation. In this group there were more than twice as many females as males. It appears that the higher the blood pressure reading at the initial examination, the less apt the males were to live ten years or longer. In group III, of patients with the highest readings, only one male lived ten years or longer (table 3). This certainly suggests that hypertension is less well borne by the males. The greatest number of patients living were those of the lower initial readings which might be interpreted as indicating that the higher the blood pressure, the less the chance of survival.

	Group I			*Group II*			*Group III*			*Totals*		
Years	*M*	*F*	*T*	*M*	*F*	*T*	*M*	*F*	*T*	*M*	*F*	*T*
10	0	9	9	0	7	7	0	6	6	0	22	22
11	7	7	14	6	9	15	0	2	2	13	18	31
12	3	5	8	5	3	8	0	3	3	8	11	19
13	6	10	16	1	11	12	1	2	3	8	23	31
14	2	3	5	1	4	5	0	1	1	3	8	11
15	4	2	6	0	3	3	0	0	0	4	5	9
16	3	0	3	0	2	2	0	0	0	3	2	5
TOTALS	25	36	61	13	39	52	1	14	15	39	89	128
Percentages			46.8			40.6			11.7	30.6	69.4	

Table 3. 128 patients known to be living at the end of ten years or longer.

Over a period of time, the blood pressure of the

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11. Page, I. H.: Classificatio of Hypertension. J. Indiana M. A., 32:562, Oct., 1939.

patients who died as well as that of those who lived was at or above the initial level. It has been our experience that, once hypertension is established, the manometric readings do not return to a persistently normal level, although they may be subject to wide fluctuations. Our observation of hypertensive disease is similar to that of others, that is, it tends to progress unfavorably.

The fact that 128 of our patients lived ten years or longer and that 14 of those lived fifteen years or longer offers some justification of the optimism so often necessary in the handling of these patients. The attainment of peace of mind on the part of the hypertensive individual is probably the most effective means of maintaining a lower level of blood pressure.

Thirty-six patients reported that their blood pressure was normal, the remainder were observed to have, or reported, an abnormally high blood pressure. We suspect that the normal readings imparted to the patient by his physician were a part of the psychotherapy employed. This was found to be true in several instances when we received replies from both parties.

	Group I	*Group II*	*Group III*	*Total*	*Per cent*
Excellent	24	9	2	35	29
Moderately good	22	32	9	63	52
Poor	13	7	3	23	19

Table 4. State of health 10-16 years after initial examination.

It is significant to note that 81 per cent (table 4) of the patients reporting on their state of health described it to be moderately good or excellent. While this datum is interesting and offers a little encouragement, we are not really justified in basing the present state of health on what the readings were ten or more years before.

The average age of the living patients was 49.5 years at the time of examination as compared to 57.1 years for those who had died.

DEAD PATIENTS

Of the 481 patients followed, 353 (73.4 per cent) were found to have died; 180 (51 per cent) were males and 173 (49 per cent) females, there being approximately the same number of each sex. As hypertension is more common in females (table 1), the mortality is, therefore, relatively higher among males. The actual mortality for the males was 81.8 per cent and the females 86.3 per cent. The average age of males at death was 61.7 years; that of females 62.7 years (the combined average was 62.2). Group III patients died approximately ten years earlier (average age 54 years) than groups I and II patients with less severe hypertension. There was no marked differences in the ages at which the men and women of the various groups succumbed.

A greater proportion of the living patients were in the earlier decades (average age 57.1 years) at the time of examination (third and fourth) than were those in the nonsurvival group (average age 49.5 years). This results in a lower average age, which suggests that hypertension may have been discovered earlier in its natural course in these patients than it was in the fatal group.

The mortality rate for the first year was 17.3 per cent, and 43 per cent for the first five years, ten years 61 per cent, and fifteen years 71 per cent (table 5). Thus, it appears that the known duration of hypertension was an important influence on the mortality rate. The rate was twice as great for group III patients for the first ten years as those of less severe hypertension in group I. At fifteen years there was a relatively slight difference. The rates were consistently higher for males at all periods.

	Males		*Females*			*Per*
	No.	*Per cent*	*No.*	*Per cent*	*Total*	*cent*
First 5 years	103	52	85	35.1	188	42.7
5-10 years	32		46		78	
All deaths within 10 years	135	68.1	131	54.1	266	60.5
10-15 years	23		23		46	
All deaths within 15 years*	158	79.8	154	63.6	312	70.9
Date of death unknown	22		19		41	
TOTALS	180	81.8	173	66.3	353	73.4

Table 5. Follow-up 481 patients. Mortality rates 5-16 years after initial examination.

*2 females lived over 15 years.

	I Moderate	*II Marked*	*III Extreme*	*Totals*	*Known Causes*
Cardiac	33	45	13	91	35.4
Cerebral	16	14	11	41	16.0
Renal	4	19	12	35	13.6
Others	34	50	6	90	35.0
Unknown	37	39	20	96	
TOTALS	124	167	62	353	

Table 6. Type of death. 353 deaths.

Deaths were attributed to three main groups of complications (table 6). Heart failure caused twice as many deaths as either of the next two most common and equally important causes, namely, cerebral accidents and renal failure. In group III, with extreme hypertension, the three main causes of death appear to have been of equal importance. There was a predominance of males who died of heart failure, which parallels the relative incidence of clinical coronary disease. Of the 257 known causes of death, 90 (35 per cent) were apparently unrelated to hypertension.

COMMENT

Janeway believed that within four years of the initial symptoms one-half the men, and within five years one-half the women, with hypertension were dead. Ehrström[12] believed the average duration of life in essential hypertension to be ten years after the first symptom, the probable average duration before symptoms about ten years, thus making a total duration of twenty years. Most figures on this feature are unreliable as they depend upon information obtained from the patient. Schroeder and Steele knew the total duration of hypertension in the majority of their 219 patients; 68 per cent were known to have developed hypertension before the age of 40. The average age of our patients at the time of initial examination was 41 years, and the average at death 62 years. It is our impression that twenty years is the probable average duration of life among patients who develop hypertension.

						Mortality at Five-Year Intervals								
				Av.Age	*Av.Age*	*1st Year*		*5th Year*		*10th Year*		*15th Year*		*Date*
Group	*No. Cases*	*No. Death*	*Total Mort.*	*at Exam.*	*at Death*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*Death Unknown*
481 Cases I	185	124	67%	55	65.5	22	12.7	53	30.6	89	46.2	112	64.7*	12
of II	219	167	76%	54.5	62.5	35	17.7	90	45.5	125	63.1	146	63.7	21
Follow-up III	77	62	60%	53	54	19	27.5	45	65.2	52	75.4	54	78.3	8
All groups	481	353	73.4	54.4	62.2	76	17.3	188	42.7	266	60.5	312	70.9*	41
Cardiac shadow enlargement	98	85	86.7	58.5	63.0	23	25.8	57	64.0	70	79.8	76	85.4	9
Congestive heart failure	59	55	93.2	60.1	62.7	18	32.1	38	67.8	45	80.4	52	92.9	3
Coronary type pain	44	35	83.3	56.4	62.4	8	19.0	16	38.1	27	65.0	33	78.6	2
Hyperthyroidism	28	18	64.3	55.0	65.0	4	15.4	7	26.9	12	46.2	16	61.5	2
Chronic nephritis	63	59	93.7	51.9	54.9	22	37.9	42	72.4	49	84.5	54	93.1*	5
Diabetes mellitus	32	29	90.6	60.6	66.2	7	22.6	13	41.9	25	80.6	28	90.3	1

Table 7. Mortality of 481 cases of hypertension and associated conditions.
*One patient lived over 15 years.

From our study it appears that, although hypertension is more common among females (ratio 3:2), the male mortality after ten to sixteen years is greater (81.8 per cent) than the female (66.3 per cent). The total mortality for both sexes was 73.4 per cent (table 5). A similar increased death expectancy among males has been noted by other observers.[2, 8, 13]

The mortality rate for hypertensives increases with advancing age both in males and in females, except among the younger females. Of 15 patients in group III who were under 40 years of age, 11 were females, only one of whom lived as long as ten years (tables 1 and 5). In our series the mortality rate was greater for the males both before and after the age of 40. The total mortality rate before 40 years of age was 50.9 per cent; after the age of 40, 74.5 per cent; however, in group III the rate was 86.6 per cent before 40 and 79 per cent for those older.

The 128 living patients lived an average of 12.2 years and were still living. Of the 353 patients who had died, 44 were known to have lived ten years or longer, the average duration after the initial observation being 11.3 years. The 172 patients (both living and dead) who survived ten years or longer lived an average of 11.4 years.

Evaluation of the significance of the level of blood pressure readings to prognosis is most difficult. Wide fluctuations seem to indicate less serious cardiovascular changes than if the systolic and diastolic readings are more or less fixed. That the prognosis is worse with very high blood pressures, particularly a high diastolic pressure, has already been demonstrated.[3, 8, 13, 14] Our arbitrary grouping shows a greater mortality for the higher readings (table 7). A high diastolic pressure is undoubtedly of more serious prognostic significance than a high systolic (table 8).

	No. Cases	*No. Dead*	*Per cent Dead*	*Months to Death*
Systolic Pressure				
Under 175	170	107	63	59.0
175-200	188	142	75	57.0
201-220	79	67	85	45.6
220+	44	37	84	26.3
Diastolic Pressure				
60-110	340	240	71	58.5
111-120	73	61	84	44.0
121-130	37	26	70	43.6
130+	31	26	84	20.3

Table 8. Systolic and diastolic blood pressure readings. Influence on mortality rates (10-16 years after initial examination).

An attempt was made to determine various symptoms and signs which might have a bearing on the length of life, and thereby might possibly aid in prognosis. The information gained can be summarized in a general way. It appeared that symptoms of hypertension and signs of associated pathology were more abundant among the patients who had succumbed, a greater incidence somewhat paralleling the height of the blood pressure.

Four of the 128 living patients gave a history of a cerebral accident, and 3 gave objective evidence of hemiplegia. Of those who were dead, 36 had given a history of paralysis, and 21 gave objective evidence of such on examination.

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[12] Ehrström, R.: Prognosis of Hypertension. Klin. Wchnschr. 5:469-470, March 12, 1926.

[13] Fishberg, A. M.: Hypertension and Nephritis. 4th Ed., Lea & Febiger, Philadelphia, 1939.

[14] Riesman, D.: High Blood Pressure and Longevity. J.A.M.A., 96:1105-1111, April 4, 1931.

Complaints of disturbances in vision occurred five times as frequently in the dead group as among those living. A corresponding number had gross objective changes in the fundi to explain these changes.

Enlargement of the cardiac shadow of the teleroentgenogram is definite evidence of heart strain and was found to be associated with a mortality of 85.4 (table 7). Further strain manifest as congestive failure is associated with a more serious prognosis of 92.2 per cent.

Patients who had chest pain attributed to coronary disease had a better prognosis; however, it was also demonstrated that typical and severe symptoms were associated with a correspondingly worse outlook.

Yater[15] stated that the hypertension of hyperthyroidism is usually systolic and of a mild type. Our patients who had hyperthyroidism had a relatively low mortality of 61.5 per cent (table 7). This suggests that these patients, while probably not relieved of their hypertension, were improved by the surgical alleviation of an aggravating factor.

Paulin found that the mortality was much greater in essential hypertension when the urine was abnormal; furthermore, that the prognosis becomes increasingly worse with the degree of abnormality of the urinary findings. Of our patients with chronic nephritis, 37.9 per cent were dead at the end of a year, 72.4 per cent at 5 years, and 93.7 per cent in 15 years.

There were 32 patients with diabetes mellitus in our series. The mortality at the time of the follow-up was 90.3 per cent; only 3 patients were living (table 7). The average at the time of examination was 61 years, at death 66 years. It would seem that, for our group of patients at least, hypertension and diabetes are not a favorable combination; however, it must be pointed out that these patients were examined late in life.

From a comparison of the various clinical manifestations of vascular damage to the three most vulnerable systems, namely, the heart, brain and kidneys, it appears that the greater the evidence of damage produced, the worse the prognosis.

SUMMARY

1. Eleven per cent of the patients given general examinations in The Mason Clinic had definite hypertension.

2. From a study of 3,000 records, the sex incidence was 53 per cent males, 47 per cent females. Of the patients having general examinations, 52 per cent were males, 58 per cent females. In the age group from 40 to 70 years, there were approximately the same number of males and females.

3. Of the 794 patients with hypertension, 41 per cent were males and 59 per cent females.

4. Practically all the patients were adults. Three-fourths of them were in the fifth, sixth and seventh decades. Females predominated in each group.

5. When classified according to the height of the blood pressure readings, 325 patients were found to have moderately high readings (group I); 350 had markedly elevated readings (group II); and 119 had severe hypertension (group III).

6. A follow-up study made after ten to sixteen years included 61 per cent (481) of the 794 patients. Of these, (a) 45 per cent were males; (b) 55 per cent were females; (c) the majority were reexamined after the initial examination; many were under close observation many years; (d) 27 per cent (128) were found to be living; (e) there were twice as many females as males among those living.

7. The 128 living patients had lived an average of 12.2 years after the initial examination; 14 patients were living after 15 years.

8. Seventy-three per cent (353) of the patients were dead. Of these, 51 per cent were males, 49 per cent females.

9. The total mortality rate at ten years was 60.5 per cent; 68.1 per cent for males, 54.1 per cent for females. The total mortality rate at fifteen years was 70.9 per cent, 79.8 per cent for males, 63.6 per cent for females. The total mortality, including 41 patients, the dates of whose death were not known, was 81.8 per cent for males and 66.3 per cent for females. The mortality rate was higher for females under 40 years of age with extremely high blood pressure.

10. The average age at death was 62.2 years, that for males being 62 years, that for females 63. Advancing age is paralleled by increasing mortality rates.

11. Observations of the age at examination and in some instances the age at onset and the average age at death indicate that the probable average duration of life after the development of hypertension is twenty years.

12. Patients of group III with severe hypertension died on an average ten years earlier than those with less severe hypertension.

13. A high diastolic has a more serious prognostic significance than a high systolic pressure.

14. Evidence of cardiac, renal and cerebral com-

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[15] Yater, W. M.: Fads and Fallacies in Diagnosis and Treatment of Hypertension. M. Ann. District of Columbia, 9:300-304, Sept., 1940.

plications were associated with mortality rates higher than those for the group as a whole.

15. Patients with hyperthyroidism had a relatively low mortality rate of 62 per cent at fifteen years.

16. Heart failure was responsible for twice as many deaths (35 per cent) as any other known cause; apoplexy was second, uremia third; 35 per cent of the known causes were unrelated to hypertension.

CONCLUSIONS

Hypertension of the levels considered in this review occurs more frequently among females but is more serious in males. The seriousness of the prognosis is, in general, further influenced by the height of the blood pressure, advancing age and presence of manifestations of progressing vascular changes, especially in the brain, heart and kidneys.

DIZZINESS FROM HYPERTENSION CONTROLLED BY HISTAMINE PHOSPHATE

WALLACE MARSHALL, M.D.
APPLETON, WIS.

In a previous communication[1] the control of dizziness, produced by hypertension, was described. Histamine phosphate in the dilution of 1:1000 was administered subcutaneously in small graded doses. The method consisted of having each patient lie down on the examining table prior to administration of the drug, which was given once or twice a week in alternating arms in the triceps region.

A towel was moistened with cold water, and this was applied to the patient's forehead after the drug produced a flushing of the face which was accompanied many times by a dull headache. The physician was in constant attendance, and the blood pressure readings were taken at short intervals.

Since histamine phosphate is such a toxic agent, only 0.05 cc. of the 1:1000 dilution was given. If given in considerably larger amounts, the material can produce shock. Hence, a separate sterile syringe, containing epinephrine (adrenalin) hydrochloride, 1:1000 solution, was available at all times, should such an untoward reaction ensue. It was noted that the systolic and diastolic blood pressures dropped at least twenty millimeters of mercury pressure shortly following the administration of the drug.

The cessation of the dizziness, which may have plagued the patient for days, is rather dramatic, for when the headache, due to the pharmacologic action of the histamine phosphate, subsided, the patient remained free from dizziness for a matter of days. At times this relief may last for a week, when the symptom gradually returns and the previously described therapeutic regime is repeated.

Since the publication of my preliminary work on this topic, I have had the opportunity to make additional studies on the subject, and I wish to describe these further observations in the course of this paper. This research has been in progress for over a three-year period, but in spite of time, I have found it difficult to obtain a large group of patients, for the private practice of medicine in a small city is not a particularly suitable medium for reseach. In all, there have been eighteen cases treated with this procedure. Each case has been studied carefully for some months, so that the opinions expressed have been checked adequately during the period of each treatment.

THERAPEUTIC RATIONALE

In a previous communication I called attention to the possibility that the cerebellar blood supply might suffer an angiospastic condition comparable to that which is described under Pal's crisis. In the latter condition the blood vessels of the cerebrum become spastic temporarily[2]. The two underlying causes for such a condition are hypertension and arteriosclerosis. These two conditions are present in hypertension, especially if the case has been of long duration.

In a former study on psychotic patients Marshall and Tarwater[3] attempted to improve the mental health of such individuals by increasing the blood supply of the brain through a vasodilatory effect produced by histamine phosphate. The pharmacologic action of this drug, in producing at least a temporary vasodilatation in the cerebellar as well as the cerebral areas, might acount for the response of patients with dizziness due to hypertension. The drop in the blood pressure readings is rather temporary, and the effect of the drug, in its ability to stop the symptom of dizziness from three to five days, may be dependent upon its more selective action (vasodilatation) in the cerebellar areas.

ATTEMPTS TO CONTROL DIZZINESS WITH OTHER MEDICATIONS

The preliminary report, in which I described the original procedure, was composed of a very small series of cases, but these were controlled with another group of cases on other types of treatment. Before any of the individual cases in the present series were given this histamine therapy, all were subjected to the potassium thiocyanate form of treatment. One patient obtained such good general results with the potassium thiocyanate that she has been kept on the regime along with the histamine therapy. All others (seventeen cases) did not improve enough to warrant continuation of the thiocyanate medication. They were given various forms of sedation, and nearly all responded favorably, generally when their activities were curtailed. The blood pressure readings dropped, *but in no case did the main symptom of dizziness improve or cease.*

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[1] Marshall, W.: Histamine Phosphate in Dizziness Caused by Hypertension. Clin. Med. & Surg. 47:285-286, Aug., 1940.

[2] Marshall, W.: Nousic and Histic Manifestations of Cerebral Angiospasms. M. Times 68:162-171, April, 1940.

[3] Marshall, W. and Tarwater, J. S.: Use of Histamine Phosphate and Peptone Solution in Treatment of Psychoses. J. Nerv. & Ment. Dis., 88:36-41, July, 1938.

Three patients were given distilled water at irregular intervals, and each became disturbed. They knew immediately that they had been given a different material which "did not act like the regular medicine." Neither did the substituted distilled water produce the headache which all patients have learned to anticipate with the histamine treatment, for when it appears the dizziness disappears. Many patients were eager for this regular therapy, for they received a sense of comfort and well-being which they found difficult to describe.

TOLERANCE TO DOSAGE

It was found in earlier experiments that the patients developed a tolerance to histamine phosphate. The same dosage, given over a protracted time, failed to produce the proper clinical response. In order to avoid such a lack of response, I began to shift the dosage, that is, the amount of histamine phosphate given at each injection was varied. One time 0.4 cc. was administered and the next time, five to seven days later, this dosage was increased or decreased 0.1 cc. It was noted that this simple procedure seemed to prevent all patients from becoming "histamine-fast."

MAXIMUM DOSAGE AND SENSITIVITY

Since histamine phosphate is a particularly potent drug, and, when given to patients for the first time, might produce untoward reactions, the point was made always to test the patient's reaction to the medication. Never more than 0.1 cc. was given subcutaneously the first time. The usual precautions of having the patient prone on the examining table, with a syringe containing epinephrine hydrochloride (1:1000 dilution) available, cold, wet towels were placed on his forehead and readings were taken on a sphygmomanometer attached to his arm. After this primary injection, the second dose, twice the amount administered the first time, was given in from five to seven days. Two-tenths of one cubic centimeter was injected, and if the therapeutic result was adequate, the dose was increased 0.1 cc. every time thereafter until 0.5 cc. was given. After that limit had been reached, the dose was decreased and the amount administered at each treatment was judged according to the patient's reaction.

Two factors determined the size of the amount to be injected. These were (1) elimination of dizziness, (2) clinical response to the drug.

The first factor was measured by the actual absence of the distressing symptom of dizziness which would usually be eliminated immediately following each injection of the histamine phosphate (1:1000 dilution). This symptom usually did not return for five or six days.

The second factor seemed to be intimately connected with the elimination of the dizziness, for the clinical response of flushing of the face, which was accompanied by a sensation of warmth in that area, slight headache and at times a metallic taste, served as an indicator that the size of the dosage was proper. However, care was exercised never to give more than 0.1 cc. more of the material than that which was administered the week previously. Peculiarly enough, the reduction of the size of the dosage in the same degree brought about the same clinical response in these patients. When patients reacted properly to the drug, the Lewis "triple-response" phenomenon was noted at the site of injection.

Not more than 0.5 cc. of the drug was administered as the maximum dose. However, this could be increased up to 1 cc., but this was not found to be necessary in the four years of clinical observation which I have had with my treatment.

DILUTION STRENGTH OF HISTAMINE PHOSPHATE

It has been a rather simple procedure to measure out 0.1 cc. amounts for my therapeutic procedures. The fact that this material is prepared in the phosphate form and is diluted to 1:1000 solution makes it a simple procedure to actually measure the amount to be administered each time. A tuberculin syringe and needle is used to withdraw the desired amount from the ampule.

Horton et al[4] used histamine diphosphate in dilutions of 0.275 mg. per cubic centimeter. He administered 1/40 mg. of this material subcutaneously twice daily for vascular headache (erythromelalgia of the head). The dose was gradually increased day by day so that by the end of the week the patient was receiving approximately 1/10 mg. daily. The injections were continued twice daily for an additional two weeks.

I have found the 1:1000 dilution of histamine phosphate in 1 cc. ampules to be practical, economical and easy to compute the needed dosage per injection. Furthermore, my procedure does not

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4. Horton, B. T.: New Syndrome of Vascular Headache: Results of Treatment with Histamine. Mayo Clin. 14:257-260, April 26, 1939.

require two injections daily. Most patients with dizziness due to hypertension are kept free of their dizziness by these injections which are given but once a week. The dizziness usually begins to recur on about the fifth day following the preceding injection and if this symptom reaches intense proportions, another injection can be given before the week is up.

As with Horton's treatment for erythromelalgia of the head, these injections must be given for an indefinite period of time, if the symptom of dizziness, due to hypertension, is to be treated. Obviously, this treatment is wholly symptomatic and is not specific in nature, for it does not permanently reduce high blood pressure, although it does eliminate the distressing symptom of dizziness in a most dramatic manner.

EXPERIMENTAL DOSAGES ON DOGS

In some unpublished research which I followed while a member of the faculty at the University of Alabama Medical School, the interesting fact was noted that dogs could tolerate large graded doses of histamine phosphate, if these injections were increased gradually. One medium-sized dog finally received 3.5 cc. of this drug (histamine phosphate 1:1000 solution) subcutaneously. The only apparent untoward symptom was the pain which the injection caused. Most of the other animals seemed to tolerate from 1 to 2 cc. of the drug. As in humans, these dogs seemed to obtain a tolerance to the material as time went on.

MAXIMUM DOSES IN HUMANS

Since this drug is a potent medication, too much stress cannot be placed on the importance of beginning treatment with a very small dose. I recommend 1/20 cc. (0.05 cc. of the 1:1000 dilution) for the initial amount.

The maximum amount which the average human can tolerate is not of importance, for such an amount is neither recommended nor is it necessary to use such large doses. An elderly woman did receive 1 cc. of the medication, but after having gone through the events which were caused by this unfortunate experience, I must advise that the maximum dose should never exceed 0.5 cc. (1:1000 dilution).

This amount is never given before the patient has been:

1. Tested with an initial small dosage to treat for sensitivity to histamine phosphate.

2. Checked as to (a) reaction on blood pressure readings taken at short intervals, (b) clinical symptoms which the material will produce, as headache, metallic taste in mouth, salivation, etc., (c) therapeutic effect of medication, especially that of stopping dizziness immediately following the treatment, (d) length of time necessary before patient is allowed to leave physician's office. It is a very good policy to keep all patients lying down for at least fifteen minutes after the administration of the drug. The patients are kept in the waiting room another fifteen minutes and are specifically directed to report any or all untoward reactions during this and all subsequent times.

3. Therapeutic response with a small increase in the dosage. The patient is never given more than 0.1 cc. increase over the previous dose which he received during his last treatment. If the therapeutic response is not sufficient, or if the time which the patient remains free from dizziness is not more than three days, the dosage is slightly increased, or the treatment periods are established at twice a week.

When the maximum dose of 0.5 cc. (1:1000 dilution) has been reached and the therapeutic effects are not marked, the dose of the next injections should be decreased. It is a rather interesting item that this method does away with the problem of the patient's high threshold or tolerance. Many cases have shown good clinical results when the dosage was decreased in progressive stages (as it was increased). The process can then be reversed and the dosage increased to meet the requirements of the patient which are to be measured by (1) signs and symptoms produced by the drug, (2) freedom from symptoms of dizziness plus feeling of well-being which patients mention when on such a regime. All doses are carefully measured by withdrawing the material in a tuberculin syringe.

STATISTICS FROM THIS STUDY

Age factor. The age levels range from thirty-five to sixty-seven years.

Number of cases and sex. There were eighteen patients who had at least two months observation with the drug. Four were males and fourteen females.

Type of disease. All had been diagnosed previously as having hypertension. No attempt was made to classify them into essential or malignant types. All showed various types of renal pathology. There were various types of casts, albumin and at times red blood cells in the urinary specimens.

Length of observation. This varied from two months to over three years.

Treatment intervals. Most patients, especially those who complained of intensive dizziness, were given graded doses of histamine phosphate (1:1000 dilution) twice weekly. The milder cases were given similar injections at weekly intervals. When the patients had improved, all treatments were administered but once weekly.

Dosage and route of administration. The first dose was usually 0.05 cc. of the drug. This was given subcutaneously in alternating arms. The patients were given the drug in a prone position on the examining table. The precautionary methods, heretofore described, were followed routinely.

At each subsequent injection period, the dosage was increased by 0.1 cc. until about 0.5 cc. dosage had been attained. Then, to prevent the patient from obtaining a tolerance or high threshold to the drug, the amount was reduced again in a similar manner, and the entire process was repeated as long as necessary.

Therapeutic effects. Those patients who exhibited lesser degrees of hypertension responded more readily to the treatment, and it was found that they could be discharged from further treatment at an earlier date than those who had persistently high blood pressures.

One patient consistently showed systolic blood pressure readings around 300 mm. This woman has been under my care for over three years and has had injections each week.

All of the eighteen patients had immediate relief from dizziness following each therapeutic period. The smaller dosage levels did not render them free from this symptom as long as did the large doses. Freedom from dizziness lasted from three to six days, and the following treatment period and dosages were dependent upon the effects produced by the drug. In other words, if therapy with 0.1 cc. only gave relief for three days, the treatments were given twice each week. If the patients remained relatively free from dizziness for five to six days, the treatments were administered once weekly.

Return of dizziness was rather interesting, for it recurred rather slowly, in that a day or two prior to the time for another treatment the patient would notice the symptom's return, particularly if bending or stooping movements were attempted.

Effect of pregnancy on therapeutic regime. One patient with a systolic blood pressure of 300 mm. became pregnant. She became extremely toxic during the second month and her dizziness was not helped by the usual injections of the histamine solution which was given at weekly intervals. She had consultations with four other physicians who agreed that a therapeutic abortion should be effected without delay. This was performed without any complications, and the patient improved immediately. Her toxic symptoms and signs were completely gone on the third postoperative day.

However, she noticed that she again became very dizzy a day or two following each injection of histamine phosphate. Previous to her pregnancy, she had been able to be free of this symptom for nearly a week, following the administration of an injection. It took approximately three months of treatments, which were given twice a week, before she again returned to the state of health that she enjoyed before her pregnancy.

Effects of medication on blood pressure. The effect of graded doses of histamine phosphate (1:1000 dilution) on patients with high blood pressures is rather constant, that is, blood pressures (systolic and diastolic phases) are usually lowered from 20 to 40 mm. These lower readings persist for a few hours, and then the readings assume their original states prior to injection of the drug. In other words, the reduction of blood pressure with this medication is temporary in nature.

SUMMARY

This study consummated a period of over three years. Eighteen patients, four males and fourteen females, were treated with graded doses of histamine phosphate (1:1000 dilution) of 0.05 to 0.5 cc. at intervals of every three days to once a week.*

The chief complaint of all hypertensive patients was dizziness which kept them from performing their limited daily routines. Following the administration of these graded doses, the dizziness disappeared for two to six days.

The systolic and diastolic blood pressures were temporarily reduced from 20 to 40 mm. This reduction persisted for but a few hours, but the dizziness was alleviated until the time of the following treatment.

103 West College Avenue

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*This research was made possible by a grant, with the medication, which was furnished by Lakeside Laboratories, Inc., Milwaukee, Wisconsin. The histamine phosphate (1:1000) was supplied in one cubic centimeter glass ampules.

WARN AGAINST TONSILLECTOMY WHEN INFANTILE PARALYSIS IS PREVALENT

A study of the case of five apparently healthy children in a family at Akron, Ohio, who, after their tonsils had been removed, developed infantile paralysis involving the muscles of breathing, with three of them dying, "emphasizes the dangers of tonsillectomy during the months in which poliomyelitis is prevalent even though cases of the disease have not been recognized in the community," four investigators warn in *The Journal of the American Medical Association* for August 22. There were six chcildren in the family but the sixth and youngest child was not operated on and remained well, although poliomyelitis virus was present in his stool.

URTICARIA*

J. E. Stroh, M.D.

SEATTLE, WASH.

Diagnosis of hives or urticaria is usually not difficult, but a patient may present himself several times at the office without hives unless seen frequently or visited at his home. They occur more frequently in the young and in females more often than in males. They rarely terminate fatally, but when this disaster occurs it is usually due to edema of the glottis or larynx.

In acute forms the etiology may never be known and usually palliative and symptomatic treatment is sufficient. It usually lasts from a few to forty-eight hours, and in about four days the patient is free of symptoms. Consequently, one cannot determine the true efficiency of his applied therapy. Ordinarily we do not consider urticaria as severe, but I have seen many a case completely incapacitated for weeks or with a history of annoyance for years.

Urticaria is a common story from foods among asthmatics, but those presenting the most severe symptoms usually have the one complaint, generalized urticaria, the superficial type, or localized angioneurotic edema, the subcutaneous type. These are one of our most difficult medical problems, and like most other allergics without an etiologic explanation treatment is most unsatisfactory. The chronic forms are more apt to be skin-positive, but a good history is still paramount and complete physical examination for foci of infection most important. One must be alert at all times in following up each possible clue.

1. Foods are very common offenders. Frequently we hear the story of strawberries, shellfish, nuts or citrus fruits producing hives, but if positive to a more common food as milk, the history may be negative. Too often the skin proves refractory and no positive reactions are obtained.

2. Foci of infection may be direct or indirect. One must check the teeth, which I think probably is one of the most common causes from a bacterial standpoint. A clue for apical abscesses must be considered, when there is edema of the tongue, the lips or about the face; sinuses, tonsils, gallbladder, prostate, cervix must be checked, and the intestinal tract must be tested for bacteria and parasites. One must get suspicious with a history of a recent breast abscess, furunculosis or rheumatic joints.

3. Drugs are the most common offenders and one must watch carefully for ingestion of quinine most commonly taken in anacin, acetyl-salicylates from aspirin, alka seltzer and probably some of the other radio nostrums, barbiturates, bromides, iodides, ipecac, phenophthalein laxatives, mouth washes, nose drops, douche powders and perhaps others. Some of these cases may present the fixed type of reaction, that is, occurring in identically the same areas. In taking the history one must not be misled by the account of more hives with constipation, when in reality it is a matter of taking more phenophthalein laxative at this time, nor must he be misled by a history of hives upon visiting the dentist as an emotional upset, when in reality the patient has received anacin.

4. Contact to external irritants. These are best diagnosed by finding out on what area of the body the hives first began, as I have seen them start on the legs below the shorts from cleaning fluid, when a particular suit was worn, recently brought back from the cleaners. I have seen them start on the arms when a particular dye or fixing material was the fault when a long sleeve blouse was worn, and I have seen them start about the neck and spread rapidly from the dye of a Hudson Seal coat. Nylon hose and the plastics will now have to be considered.

5. Endocrine. I am not sure if these are purely endocrine in etiology but I have seen cases of marked edema of the face, ankles and hands at the period time which were relieved after ovarian hormone therapy of two to three months duration.

6. Inhalant factors. These are quite common among children who have had an excessive exposure to pollen as running through vacant lots or contacting cats and dogs, and I have also seen them present on excessive exposure to house dust. One of the most interesting cases I have seen is a young chap who broke out with hives and developed a marked edema of the face whenever he chewed gum. His sensitivity became so great that on a recent airplane trip over the mountains, each passenger was given gum and although he did not chew any himself, he still developed edema of the face.

7. Sera reactions are usually considered acute but may be far more severe and of longer duration than most of the acute cases of hives.

8. Physical factors. Both heat and cold have been known to be offenders in producing urticaria, particularly cold. It is this latter type of patient who would probably develop severe anaphylaxis while swimming and a fatal outcome, which would explain some of the drownings in strong, healthy individuals in the past. Physical factors may also act

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*Read before the Annual Meeting of Washington State Medical Association, Seattle, Wash., August 25-27, 1941.

as synergistic agents as I have seen one patient who could play tennis in the sunshine or paint in the shade without developing hives but as soon as he painted in the sunshine he would develop severe urticaria. Thus photosensitization agents are factors.

9. Parasitic urticaria is not uncommon in cases of scabies of long duration. Infestation of the intestinal tract must be considered.[1]

10. Psychogenic factors are frequently a "trigger mechanism" and at times the sole factor.[2] One is confronted with a difficult decision here and must exhaust all other factors before being justified in saying urticaria is psychogenic. To date I have not seen a case of purely psychogenic hives. Sulzberger in his book reports no cases.[3] One cannot deny that a disturbance in the vagosymphathetic balance causes an increase in capillary permeability.

I am sure the offending agent in urticaria production is not histamine as we know this drug. We can destroy histamine with heat, and yet cooking all foods thoroughly is not the answer in all food cases. Denatured proteins may be a factor. It would be impossible to compare the active substance with our "bottled" histamine, since the amount injected intradermally or subcutaneously over the body to produce a generalized urticaria would be far in excess of the amount necessary to produce anaphylactic shock.

And it should increase the HCL content of the stomach, one of the things we frequently give to combat urticaria.[4] Perhaps nature is already attempting this but has failed. The panacea drug histaminase usually fails to give the desired result, too. However, with all its earmarks it must be a histamine like substance or H substance.

Since our theories to date have not settled this question, I think at this time a more practical physiochemical approach is justified, as we know the problem is one of altered permeability plus localized edema. This can be partially accomplished by using a combination elimination, acid ash, cooked diet. Most of us are aware of the fact that strawberries frequently produce hives and just as frequently give a negative skin reaction. However, heat, as pouring boiling water over them, will destroy this factor, giving evidence that it is an H substance and not a protein reaction. If this procedure is a proven fact with one food, there is no reason to believe why it cannot be present in other instances and explain many cases of urticaria and the negative skin test.

Therefore, one of the logics of such a diet would be thorough cooking of all foods. The acid ash high protein content of such a diet would help eliminate the edema and a low Na ion content would tend to decrease fluid retention. Elimination of common food offenders can still be combined with these factors. They are chiefly milk, chocolate, cheese, shellfish and alcoholic beverages.

With these factors in mind the following diet has been used with some degree of success.

Avoid:

1. All milk and milk products; this includes cream, ice cream, all kinds of cheese, and all dishes made with milk such as cream soups, creamed dishes, custard, puddings, etc. Well washed butter may be used.
2. All citrus fruits: orange, lemon, lime, grapefruit and tomatoes.
3. All seafoods and shell fish, such as crab, shrimp, oysters, etc.
4. All chocolate or cocoa.
5. All raw fruits or vegetables. Home canned or home cooked fruits are preferred. Do not eat or drink anything that has not been cooked. No alcoholic beverages.
6. Nuts of all kinds.
7. All salt preserved foods such as bacon, ham, salt pork, etc. Use no salt in the preparation of foods.

At least three servings of meat and one egg daily. Beef, lamb or pork may be used, but only one kind per day, i.e., beef for breakfast, dinner and supper. No white potatoes. Figure 1 presents sample menus with constituents of foods.

I allow wheat in the original diet, if there is nothing in the history revealing a sensitivity, since it is the most difficult to omit for the patient. However, such cereals as Ry Krisp or rice could be substituted. One can then make a choice of meat or vegetables. I have never felt that restricted diets in number of foods eaten was as important here as in asthmatic cases. To this diet are added two antiedemic factors, dicalcium phosphate with viosterol gr. xv daily, and cevitamic acid 50 mg. t.i.d. as the diet is already deficient in these ingredients. Calcium lactate should not be used in the milk-sensitive case. The A, B, D vitamins should be adequate, but if the patient is past middle age dilute hydrochloric acid is added. I use potassium chloride 45 to 60 grains a day in divided doses, and have even used more according to the patient's tolerance. However, I have never felt its addition has made a great deal of difference but it is still advocated by many authors.[5, 6]

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[2] Bowen, R.: International Correspondence Club of Allergy, Series IV, p. 6-7.

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[4] Orr, M.: Urticaria. Canad. M. A. J. 38:159-162, Feb., 1938.

[5] Cohen, A. E.: Treatment of Chronic Urticaria with High Protein, Low Sodium, Acid-Ash Diet, with Added Potassium Chloride. J. Allergy 10:61-63, Nov., 1938.

[6] Rusk, H. A. and Kenamore, B. D.: Urticaria—New Therapeutic Approach, An. Int. Med. 11:1838-1844, April, 1938.

Breakfast:	*Protein*	*Calories*	*Calcium, Grams*	*Iron, Milligrams*	*Vit. A*	*Vit. B*	*Acid*	*Base*
Peach, ½ cup		75	.010	.22	1700	8		4.7
Egg, one	6.0	79	.031	1.45	400	19	5.5	
Steak, beef, 1 small	20.0	180	.014	3.5	55	33	12.1	
Oatmeal, ⅔ cup	4.3	119	.020	1.44		63	4.8	
Whole wheat toast, 1 slice	3.0	74	.015	.48		36	2.3	
Butter, 2 teaspoons		74	.002	.02	266			
Lunch:								
Roast meat, beef, large serving	28.0	230	.015	5.3	34	26	8.7	
Peas, fresh, ½ cup	6.7	101	.023	2.1	750	130		1.0
Squash, winter, ½ cup	1.5	44	.019	.55	3785	16		2.6
Pears, ½ cup		75	.009	.20	6	8		1.5
Whole wheat bread, 1 slice	3.0	74	.015	.48		36	2.3	
Butter, 2 teaspoons		74	.002	.02	266			
Dinner								
Meat, beef, large serving	28.0	230	.015	5.3	34	26	8.7	
Beets, ½ cup	16.0	46	.028	.85	100	17		11.0
Sweet potatoes, 1 medium	3.0	213	.034	1.31	3325	53		14.9
Applesauce, ½ cup		80	.006	.27	46	4		2.4
Whole wheat bread, 1 slice	3.0	74	.015	.48		36	2.3	
Butter, 2 teaspoons		74	.002	.02	266			
TOTAL	108.1	1916	.275	23.99	11034	511	46.7	38.1
Adult Standard	70-80	2000-3000	8.000	.12	4000-6000	250-500		

Fig. 1. Sample Menus. (Calculations done by Miss Edna Cox of King County Hospital Dietary Staff.)

This diet is by no means the answer to this condition, but is given to my patients on their first visit and in many instances has been adequate to control the individual until food additions or testing prove the offender, and during the meantime one has the satisfaction of knowing that he is doing something for the patient directed from a physiologic and chemical standpoint.

Histaminase even up to 75 gr. a day has not proven of any help in most instances. Histamine has been of help at times, starting with .05 cc. daily of a 1:1000 dilution of histamine phosphate the first week and gradually increasing the dose and lengthening the time until .5 cc. can be taken and repeating this about once a week for three doses. Most patients will not tolerate going up to 1 cc. without symptoms of overdosage.

Staphylococcus toxoid or specific autogenous vaccine is indicated in bacterial cases culturing the suspected foci or the bowel.[7] The pathogenic selectan method (grown on patient's blood) of preparing the vaccines and heat killing the organism is preferred.

Symptomatic treatment will usually take care of the acute case and such therapy must be combined in treating the exacerbations of the chronic case. Itching may be the most troublesome factor. This may be relieved by colloidal baths of oatmeal or bran or by the hydrolyzed starch bath. The physical aspect of urticaria has been neglected in the past and particular attention should be paid to the temperature of the water for the bath, since many cases are relieved of the itching by the application of hot or cold alone.

I am sure all of us are familiar with the story that, "the itching of my hives became so severe that I did not know what to do so I jumped into a tub of hot water and was relieved almost immediately." The temperature can often be determined by inserting the hands or feet in varying temperatures of water just to see which gives satisfactory relief, then proceed with a full tub bath at this temperature.

I prefer 5 minim doses of adrenalin in the exacerbated case repeated every twenty minutes until six doses have been received, and usually no toxic symptoms occur by this procedure. Adrenalin in oil or in gelatin, .5 to 1 cc. may have a more lasting effect. The use of splenic extract injections has been rather disappointing.

Sedatives are essential at times for rest and must be used judiciously and with great caution. The bromides, barbiturates, chloral hydrate, paraldehyde or codeine may be used according to one's choosing.

Calcium intravenously, gr. xv in 10 cc. injections slowly daily has been used a great deal and in some cases has proven almost a specific.

Autohemotherapy, done by withdrawing 10 cc. of blood from the patient's vein and injecting into the buttocks two to three times a week, has been recommended, but again has not been of help to me.

Theelin or plestrin 2000-5000 I. U. by hypo twice weekly except during the week of menses has been specific in chosen cases. I had one patient who reported no hives occurring after she painted the involved areas with tincture of iodine.

My experience with soricin as a bowel detoxifier, sulfaquanidine as a bactericide, or local roentgen therapy have been too limited for comment.

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RECENT ADVANCES IN SURGERY*

THEIR CLINICAL APPLICATIONS

JOHN A. GIUS, M.D.
PORTLAND, ORE.

Several important advances of the past few years have been utilized in our institution and warrant brief discussion. It is safe to say that in the future, advances in the field of surgery will be especially rapid. War always provides the extra stimulus necessary to bring out the best efforts and perhaps this present "total war" will be the starting point for revolutionary changes which we will be able to discuss in coming years. At the present time the National Research Council is sponsoring various research projects throughout the country in an attempt to get rapid and accurate information on such subjects as the best methods of treatment of infections, preservation of blood plasma, treatment and prevention of gas gangrene, various aspects of chemotherapy and many other problems. Our present knowledge on many of these subjects is incomplete and certainly many contributions of great value will be made in the immediate future.

The progress in chemotherapy has been particularly rapid and all are familiar with the wide clinical application of the sulfonamides. They certainly have been a boon to medicine and mankind, and I shall not be surprised if some day the medical man may denote the years prior to 1935 as B.S., or before, and A.S., after sulfanilamide.

For practically all purposes, except where infection exists in the central nervous system, sulfathiazole has been used on the surgical services[1]. Sulfadiazine is preferred where a concentration of sulfonamides is desired in the cerebrospinal fluid. The results from local application of sulfathiazole to contaminated and infected wounds has been very gratifying. In our hands it has been the least toxic and the most efficacious drug. Care must be taken, however, to dust only sufficient drug into the wound to cover the surfaces and not an excess which may cause foreign body reaction. This complication has been reported by others but we have not had trouble of this sort.

We agree with the teaching that removal of all necrotic tissue, debris, pus and avoidance of local anesthesia is important, if we are to secure the maximum chemotherapeutic effect. All of these substances contain para-amino benzoic acid which inhibits the action of the sulfonamides. Contamininated wounds less than six hours old may usually be safely closed, if proper debridement, irrigation and sulfathiazole implantation are carried out.

In peritonitis, either localized or diffuse due to appendicitis, there can be no doubt as to the efficacy of sulfathiazole implantation[2]. At present we recommend preoperative correction of dehydration, electrolytic depletion and anemia, and early operation on all cases of appendicitis except those with a palpable abscess in the right lower quadrant. Operation is deferred in some of these cases, depending on the condition of the patient, duration of symptoms and evidence of progressive localization. In all others the pus is suctioned off, the appendix is removed, providing it is easily accessible and no harm is done by its removal. Sulfathiazole powder, from 5 to 15 grams, is introduced into the peritoneal cavity and into the wound which is then loosely closed with catgut about a single Penrose drain. Sulfathiazole must be dusted into the wound because it is here that secondary abscess frequently develops unless precautions are taken. Ordinarily sulfathiazole is not given by mouth or parenterally postoperatively. In cases of appendiceal abscess, drainage is promptly performed if there is any evidence of extension. In some cases, particularly in children, the abscess may subside under a conservative regimen and appendectomy can then be done during the free interval.

We have found the use of sulfathiazole in both the prophylaxis and treatment of postoperative pneumonia to be a distinct advance. Abdominal cases with chronic or acute respiratory infections, which are likely to develop postoperative pneumonia, should be started on the drug preoperatively in order to prevent lung involvement. Likewise its early use in the first stages of atelectasis will usually result in prompt control of the infection which frequently follows collapse of the lung.

The hopes, which were held for sulfaguanidine as a drug for sterilizing the gastrointestinal tract and thus protecting the patient upon whom bowel surgery was undertaken, were illfounded[3]. A reduction of perhaps 50 per cent of the colonies in the bacterial count of the stool can be demonstrated, but nothing approaching sterility can be achieved. We have continued to use the drug in large amounts on our colon cases but have not completely evaluated the results. In many clinics sulfaguanidine is no longer used in these cases.

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*From the Department of Surgery, University of Oregon Medical School.

*Read before the Annual Meeting of Alumni Association of University of Oregon Medical School, Portland, Ore., March 25, 1942.

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During the past few years there has been a greater appreciation of the importance of vitamins in surgery. Vitamin K is now fixed in our armamentarium[4]. Prothrombin estimations are routine preoperative and postoperative procedures on all jaundiced or bile fistula cases and therapy for correction of the bleeding tendency is instituted if indicated. We have used both the natural vitamin K with bile salts orally as well as the synthetic hydroquinones parenterally with equally good results.

Much has been written concerning the importance of vitamin C in wound healing. Experimental evidence indicates that ascorbic acid is necessary for the formation of collagen fibers and intercellular cement substance. Patients on inadequate diets as well as those with lesions of the gastrointestinal tract, who are unable to ingest or assimilate food, frequently have low ascorbic acid blood levels. These patients should receive the juice of four oranges and two lemons or 100 milligrams of ascorbic acid daily.[5] There is no question but that our wound healing results have improved since this regimen has been followed. Vitamin A is related to epithelialization but it has been difficult to evaluate its importance in the surgical patient.

One must not presume, however, that vitamins are the mainstay in wound healing. The wound healing principles, which Halsted[6] emphasized many years ago and which Whipple[7] has reemphasized, remain the sheet anchor of successful surgery and adherence to these is probably far more important than all the vitamins we might decide to administer.

Briefly these principles are: (1) gentle handling of tissues, be as atraumatic as possible, handle tissues with "loving kindness"; (2) careful hemostasis and ligation of vessels individually as far as possible, avoidance of mass ligatures; (3) use the finest and least irritating suture material, interrupted sutures are preferable; (4) avoidance of tension on tissues; (5) avoidance of dead spaces; (6) asepsis.

In 1939 Meade and Ochsner[8] and in 1941 Meade and Long[8a] reported their studies on cotton sutures as compared to other materials. They found cotton to be least irritating in the tissue and silk next to cotton. Catgut was third and linen most irritating. These conclusions were based on histologic observations and their studies have been confirmed by others, including ourselves. Not the least important reason for using cotton, however, is its economy. We have used cotton consistently and with gratifying results on the surgical services at both Doernbecher Childrens Hospital and Multnomah County Hospital for over a year.

It is important again to stress that wound healing depends on many factors and the suture material used is only one of these. Gentleness, asepsis, hemostasis come foremost. The cotton thread used is the ordinary spool type of four sizes, the heavy no. 20 and finer nos. 40, 60 and 80. It is sterilized on sections of rubber tubing because cotton shrinks when heated and will break if wound on a rigid spool. The fine cotton is used for most ligatures and for closure of the subcutaneous fascia and skin. It is a rule never to use a continuous suture of cotton or any nonabsorbable suture as this may cause continued drainage if infection ensues. Interrupted sutures placed without tension are essential and the far and near suture described by Whipple[9] is used in fascia. For closure of the peritoneum we believe a continuous plain catgut suture is to be preferred because interrupted sutures may leave a small defect, through which omentum can herniate. Ordinarily we use no stay or retention sutures.

In gastric and bowel surgery we use catgut for the inner layer and interrupted fine cotton sutures for the seromuscular layer[10]. Five-O chromic catgut is ideal for the through and through layer.

The relationship between lowered blood proteins and edema and delayed wound healing is well known[11]. In cases where nutrition is impaired or where a patient is unable to take food postoperatively for some time, one must keep in mind the fact that hypoproteinemia may lead to edema and inadequate emptying through a gastroenteric stoma, poor wound healing or wound disruption and even peripheral edema. Hypoproteinemia may be corrected to a degree by blood or plasma transfusion.

The work of Elman and Weiner[12] and others on the intravenous use of amino acid preparations to raise the blood proteins has not as yet been applied widely. However, there is reason to believe this may one day be a practical method. The most satisfactory method for raising the blood proteins is absorption of a high protein diet. If obstruction exists high in the gastrointestinal tract, as for example in a case of stenotic pylorus due to ulcer, the patient may be given a temporary jejunostomy and fed a concentrated high protein, carbohydrate and vitamin diet. This usually will result in rapid improvement of the patient's general condition which will allow for radical operation.

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Many worthwhile contributions have been made on the subject of transfusion of both blood and plasma[13]. The method of collecting and storing blood that we have found most satisfactory is that involving the use of transfusovac flasks containing sodium citrate solution. This is probably the simplest and safest method now available. Plasma is prepared from blood which has been stored for two weeks, by siphoning into plasmavac flasks. At Doernbecher Hospital we have kept a quantity of plasma on hand for use particularly in severe burns.

The advantages of plasma are obvious. These briefly are: it may be stored indefinitely in the ice box; it requires no typing before administration; it provides the proper concentration of proteins to maintain the intravascular osmotic pressure. In severe hemorrhage, however, whole blood is preferrable because the red cells must be replaced and this can be accomplished only with whole blood transfusion.

It has been demonstrated that in the preshock state saline or glucose solutions will help to bolster the falling blood pressure, but once shock has developed these solutions will not break the vicious cycle which seems to propagate itself. These solutions, together with protein, are lost through the capillaries as fast as they are poured in, whereas blood plasma is retained in a large measure and the blood volume and osmotic pressure are thus corrected and stabilized.

Considerable progress is being made in the treatment of burns. The tannic acid-silver nitrate treatment introduced by Bettman[14] was a distinct advance. However, the occurrence of infection beneath the eschar in some of these cases has always been a definite objection to tanning with any substance which does not remain bacteriostatic. Likewise the rigid constricting eschar is undesirable on the face and hands[15] chiefly because of interference with circulation. Gentian violet 2 per cent forms a pliable bacteriostatic eschar and the triple type composed of crystal violet, brilliant green and neutral acriflavine introduced by Aldrich[16] has been reported satisfactory. The marked staining of linen which occurs when these drugs are used is a distinct disadvantage.

The sulfonamides have been adapted to the treatment of burns with some success. At Pearl Harbor sulfathiazole and sulfanilamide in mineral oil were used with apparently mediocre results[17]. It is said that many of these cases became infected and healed slowly. A few reports on the use of sulfanilamide or sulfathiazole placed over burns which were subsequently tanned have come to our attention. I am unable to say how effective is this method but we are trying it in some cases.

At Doernbecher Hospital we have a committee on burns composed of a pediatrician, plastic surgeon and surgeon. This committee intends to concentrate on the study of burns in children and evaluate the methods of treatment of shock, local treatment of the wound, late treatment and results. At present we are experimenting with a sulfadiazine 3.5 per cent solution in triethanolamine which was advocated by Pickrell[18] at Hopkins. This solution is not as yet commercially available. It is a clear, nonirritating solution which when sprayed on a burn provides almost immediate relief of pain and a thin pliable eschar results which is definitely bacteriotsatic. The spray is applied every hour the first day, every two hours the second and every three hours as needed thereafter. The blood levels from absorption of the sulfadiazine are low and no toxic effects have been noted in our cases, but a few severe reactions have been reported. The spray may be used on the face and even the eye without harm. I believe some compound such as this may ultimately find considerable vogue in the treatment of burns.

Early grafting of denuded areas, once infection is cleared up, certainly is advisable and we have used small deep or "pinch" grafts and Thiersch grafts in most cases. Great care must be taken to prevent contractures especially in burns of the extremities.

The Orr-Trueta[19] treatment of compound fractures has been widely discussed lately. From physiologic, therapeutic and surgical viewpoints it certainly is a distinct advance. Its value has been proven on the various battle fields of this great war. It consists of careful and complete debridement, irrigation and removal of accessible foreign bodies, careful hemostasis, implantation of sulfonamides, either vaseline gauze packing or primary closure, reduction of the fracture and, most important, complete immobilization in a plaster cast. These same principles are applicable to practically all wounds sustained either in civilian or military life and attention to details of the procedure should result in saving many limbs and lives.

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A great deal of discussion has arisen concerning the virtue of roentgen therapy in prophylaxis and treatment of gas bacillus infections. Kelley in 1928 first reported favorable results with this method and his most recent report confirms his original conclusions[20]. Experimental findings on animals can not be directly applied to humans, even though some workers seem to draw sweeping conclusions from their animal work. At the present time the National Research Committee is spending much time and money investigating this problem[21].

There seems to be good evidence that radiotherapy does exert a beneficial effect in these anaerobic infections. In them it is safe to say that treatment at best is none too good and it would seem that all adjuncts should be utilized. Kelley has stated that sulfonamides and roentgen ray do not work well together. Sulfonamides, however, do have an inhibiting effect on these infections and we prefer to use sulfathiazole locally as well as systemically. Small doses of roentgen ray, usually 100 r twice a day for three days, are sufficient for prophylaxis or treatment. Amputation should not be done except in unusual circumstances.

Zinc peroxide has been proven efficacious in treating these cases and the oxygen which is slowly liberated over a period of twenty-four hours has marked therapeutic value in anaerobic infection, due either to the clostridii or anaerobic streptococci. Gas gangrene antitoxin, although of debatable value, should be administered in massive doses.

During the past few years there has been a swing toward early operation in acute cholecystitis.[22] This has been based upon the frequency with which rupture of the gallbladder and either abscess or peritonitis results in cases treated by the conservative or nonoperative method. It has been our experience that selected cases with acute gallbladder infection, usually secondary to impacted gallstones, do very well if operated upon within forty-eight hours after the onset of symptoms. We subscribe to the policy of early operation, if the patient is a good risk case and shows no distinct improvement during a short period of observation while fluids and general supportive methods are being administered. As in all surgical problems, however, surgical judgment must govern to a large extent the management of any specific case.

The same situation holds in management of the bleeding peptic ulcer[23]. Massive hemorrhage from ulcer in patients over fifty years of age carries a mortality somewhere between 10 and 20 per cent. Deaths are common in arteriosclerotic males and it is in this group that surgical intervention has been undertaken more frequently during the past few years. These cases are given repeated transfusions of whole blood slowly, until a hemoglobin level of 60 per cent, if possible, is reached. Then follows gastric resection with or without removal of the ulcer, depending on its location. These are desperate cases and, though the operative mortality is high, it is probable that early surgical consultation and careful selection, preparation and operation of cases will result in a lowering of this rate.

Little advance has been made in the therapy of carcinoma of the stomach. The advanced stage of the disease at which the diagnosis is so often made frequently precludes curative surgery. The aseptic types of resection advocated by Wangensteen[24] and Holman[25] have not been used in this institution. Neither have we used the sulfonamides to reduce the bacterial content of the stomach preoperativly. There is much to be said in favor of these suggestions, however.

Intestinal obstruction continues to be one of our chief problems, but during the past year the mortality has been reduced to around 8 per cent by placing these cases under the care of one individual and utilizing all the adjuncts to treatment at our disposal. Early operation is a primary consideration in successful treatment. Spinal anesthesia is preferred. Other therapeutic aids are the Miller-Abott tube with continuous suction in selected cases; 100 per cent oxygen administered by means of the BLB mask for distension or anoxia; cold packs to the abdomen in paralytic ileus; and sulfonamides when associated infectious conditions exist.

The principle of decompression of the distended gut prior to attempting anastomosis or removal of tumors of the large bowel has been adequately stressed. During the past year we have treated two infants with intussusception and gangrenous bowel by means of a modified Mikulicz procedure[26] with gratifying results. In this operation a side-to-side ileotransverse colostomy is made above the site where the ileum and colon are exteriorized. This prevents excessive loss of fluids which infants do not tolerate. Subsequently, the osteum is closed. Previously, primary resection and anastomosis of the ileum to the transverse colon was done with a high incidence of leakage, peritonitis and death.

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[25] Holman, E.: Aseptic Resection of Stomach for Carcinoma and Ulcer. Surg., Gynec. & Obst. 74:146-152, Feb., 1942.

Injection of the lumbar sympathetic chain with procaine has been used a great deal in treatment of both thrombophlebitis and phlebothrombosis[27] of the lower limbs. Most of these cases have shown rapid subsidence of edema of the leg and tenderness over the femoral vein and systemic symptoms. The results of procaine and alcohol block in arteriosclerotic peripheral vascular disease have not been so dramatic, but some cases have been helped. There is usually temporary relief of pain and evidence of increased blood flow, but most of these cases eventually come to amputation. The Callender type of amputation has been used most frequently and has given satisfactory results.

One of the most significant advances of the past year is the contribution of Huggins and his associates[28] of the University of Chicago who reported that castration in cases of cancer of the prostate with metastases results in marked improvement in the general condition of the patient, decrease in the size or disappearance of the tumor and its metastases and relief of pain. Irradiation of the testicles as well as stilbestrol seems to cause a similar but less striking effect. Dr. Hand of the Department of Urology has several cases which have shown an unusually favorable response following castration and it is likely that other observers will shortly report similar experiences.

SUMMARY AND CONCLUSIONS

War has always been a great stimulus to research in medicine and it is certain that great strides will be made during the next few years. Advances of the past are being utilized to their fullest extent to protect the soldier as well as the civilian, to alleviate suffering and preserve life and to rehabilitate the injured.

Advances which we have utilized with gratifying results have been:

1. Local and systemic use of sulfathiazole almost to exclusion of other drugs in the treatment and prophylaxis of infections.
2. Use of vitamins in adequate doses in surgical cases, particularly vitamins C and K.
3. Use of high protein diets, and plasma or whole blood transfusions in cases where hypoproteinemia exists.
4. Use of fine cotton as suture material in all types of operations except where a continuous suture is preferred. Here we continue to use fine catgut.
5. Use of plasma transfusions in shock without hemorrhage, particularly shock due to burns.
7. Use of the principles of the Orr-Trueta method of treating compound fractures.
8. Use of roentgen therapy in prophylaxis and treatment of gas gangrene infections.
9. Early operation in cases of acute cholecystitis seen within forty-eight hours after onset of symptoms.
10. Early operation, that is gastric resection, in selected cases of bleeding peptic ulcer over fifty years of age, following correction of anemia and shock.
11. Early operation in intestinal obstruction after adequate preoperative preparation, followed by careful postoperative management, utilizing all the adjuncts to treatment at our disposal.
12. Use of the modified Mikulicz operation in children with gangrenous intussusception.
13. Castration for carcinoma of the prostate with metastases as a means of reducing size of primary lesion and its metastases and alleviation of symptoms.

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[26] Woodhall, B.: Modified Double Enterostomy (Mikulicz) in Radical Surgical Treatment of Intussusception in Children. Arch. Surg. 36:989-997, June, 1938.

[27] Ochsner, A. and DeBakey, M.: Therapeutic Considerations of Thrombophlebitis and Phlebothrombosis. New England J. Med. 225:207-227, Aug. 7, 1941.

[28] Huggins, L., Stevens, R. E., Jr. and Hodges, C.V.: Studies on Prostatic Cancer; Effects of Castration on Advanced Carcinoma of Prostate Gland. Arch. Surg. 43:209-223, Aug., 1941.

DIAGNOSIS OF PARESIS WITH NEGATIVE SPINAL FLUID*

William B. Dublin, M.D.
AND
Robert W. Brown, M.D.
FORT STEILACOOM, WASH.

Diagnosis of paresis should not be made in the presence of normal cerebrospinal fluid findings. This is true regardless of the character of the psychosis, the presence of typical tabetic spot pain or of typical findings of tabes dorsalis. Three possible instances which are exceptions to this dogmatic statement have been noted in the *Cooperative Clinical Studies* in a series of 5,293 cases.[1] Grave consideration of a possible nonsyphilitic organic basis of the existing psychosis is of value in the avoidance of undue enthusiasm for treatment directed against a supposed syphilitic psychogenic lesion.

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*From the Divisions of Pathology and Neurology, Western State Hospital, Fort Steilacoom.

ILLUSTRATIVE CASES

Case 1. Autopsy No. 12-41. The patient, a white man aged 58, was admitted to Western State Hospital August 9, 1940, for treatment of psychosis of two years duration. Symptoms included exaltation, poor business judgment and expansive delusions. The patient was said to have had a syphilitic lesion thirty-thre years previously, and had had sporadic treatment; he had received no fever therapy. A Wassermann test, done in 1911, was said to have been reported positive. Spinal puncture, made a number of years prior to admission, was said to have yielded negative results.

Physical examination on admission revealed blood pressure of 160 systolic and 90 diastolic. Patellar and Achilles reflexes could not be elicited. Marked swaying was observed when the patient attempted to stand on one foot with eyes closed. Vibratory sensibility could not be demonstrated in the lower extremities. An encephalogram, made Sept. 9, was normal. Results of examination of the blood with Kolmer, Kahn and Laughlen methods were negative. Spinal puncture revealed a pressure of 12 cm. of water, cell count 3 lymphocytes, negative globulin, protein 20 mg., negative Kolmer and Kahn, and coloidal gold 0000000000. This was repeated with confirmatory results. Diagnoses were made of psychosis with syphilitic meningoencephalitis (general paresis) and tabes dorsalis.

Malarial therapy, begun Sept. 10, was tolerated poorly. Evidence of cardiac failure became increasingly prominent, and the patient expired Jan. 13, 1941.

Postmortem examination revealed edema, grade 2, of the ankles. There were 5,000 cc. clear straw colored fluid in the abdomen, 200 cc. in the right pleural space, 700 cc. in the left, and 50 cc. in the pericardial sac. The heart weighed 530 Gm. The left ventricular wall measured 2.0 cm. in thickness, and the right, 0.7 cm. Coronary arteriosclerosis was grade 2, with occlusion of the left anterior descending branch by a grey thrombus. There were old and fairly recent myocardial infarcts. There was no valvular disease. The aorta showed atherosclerosis grade 2, but no syphilitic aortitis. The spleen was typically malarial. The liver weighed 2410 Gm. and showed passive congestion, grade 4. The kidneys were mildly granular. The brain weighed 1415 Gm. Cerebral arteriosclerosis was grade 3. There was a recent softening, 1.0 cm. in diameter, of the white matter of the right cingulate gyrus.

Microscopic examination yielded confirmatory results. Sections of brain revealed arteriosclerosis, arteriolosclerosis, and a diffuse increase of glia, with some loss of nerve cells but none of the characteristic stigmata of syphilis. There was degeneration of portions of the posterior funiculi of the spinal cord. The pathologic diagnosis was hypertensive cardiovascular disease, general (especially coronary and cerebral) arteriosclerosis, with cerebral and myocardial infarcts; tabes dorsalis.

Case 2. Autopsy No. 42-42. The patient, a white man aged 62, was admitted to Western State Hospital March 5, 1942, for treatment of psychosis of two years duration, having been referred to the Hospital for malarial therapy. He had had limited treatment of a syphilitic infection seventeen years previously.

Physical examination revealed blood pressure of 130 systolic and 90 diastolic. Slight swaying was observed in the Romberg test. Reactions to Kolmer, Kahn and Mazzini tests of the blood were strongly positive. The spinal fluid was under a pressure of 20 cm. of water, with cell count of 2 lymphocytes, slight trace of globulin, total protein 40 mg., negative Kolmer and Kahn, and colloidal gold 0000000000. A diagnosis was made of psychosis with meningovascular syphilis, and malarial treatment was begun March 24. The patient, not in good condition on admission, did poorly, and died April 2.

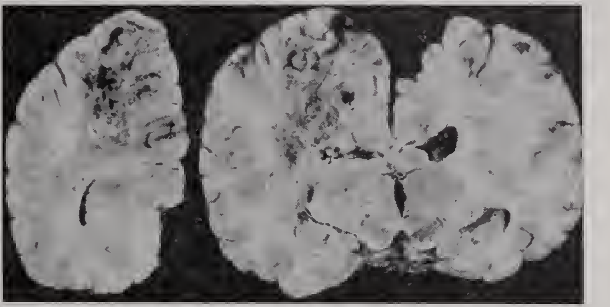

Fig. 1. Brain of case 2. Glioblastoma.

Postmortem examination revealed nothing of significance outside the brain. The brain weighed 1640 Gm. and felt slightly firmer than usual. Arteriosclerosis was minimal. Nothing remarkable was visible externally. On cut section, the right parietooccipital white matter was largely replaced by an infiltrating tumor (fig. 1). The latter was honeycombed, and contained foci of calcification and of recent hemorrhage. The absence of appreciable deformity of cortical or ventricular outline was striking.

On microscopic examination, the tumor proved to be a glioblastoma, of mixed cell type.

The pathologic diagnosis was glioblastoma of the brain.

SUMMARY

In two cases in which a diagnosis of paresis was made in the absence of positive spinal fluid findings, postmortem study indicated that organic lesions other than syphilitic were the basis of the psychosis.

TRAUMATIC RUPTURE OF THE KIDNEY

REPORT OF LATE RESULTS

H. D. Norris, M.D.

SEATTLE, WASH.

Traumatic lesions of the kidney are increasing in frequency due to various changes in our social order. The automobile and a more extensive and intensive athletic program are two large contributing factors. Extended industrial occupation with more hazardous work contributes to the increasing incidence of ruptured kidney. Previous to the turn of the century a kick from a horse or a mule, a blow or a fall were the common causes given for production of this condition. Traumatic kidney lesions are more common in the male. Older figures gave as high as 90 per cent[1], but with an increase in women automobile drivers and their industrial occupation this figure for men is now lower. The right kidney is injured more frequently than the left in about the ratio of 100 to 70.

The types of injury are: (1) penetrating and (2) nonpenetrating. Injuries of the penetrating type

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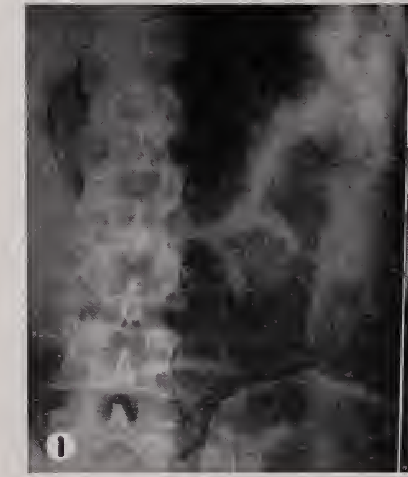
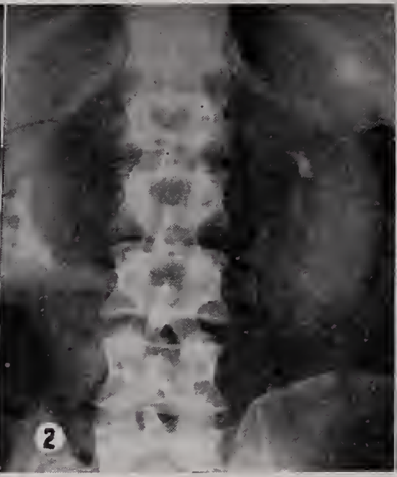
1. O'Leary, P. A., Cole, H. N., Moore, J. E., Stokes, J. H., Wile, U. J., Parran, T., Vonderlehr, R. A. and Usilton, L. J.: Cooperative Clinical Studies in the Treatment of Syphilis, Reprint 62, Veneral Disease Information, Vol. 18, No. 3, March, 1937.

are not often seen in civilian practice, but are commonly observed on the battlefield and in bombed civilian areas. In civilian practice they are usually the result of bullet or knife wounds.

Injuries of the nonpenetrating type occur most commonly in civilian practice. The nature of these injuries are: (1) direct violence, as sudden external trauma to the kidney region from kicks or blows, falls, striking upon the back or abdomen; crushing injuries, as when run over by an automobile or caught between two heavy objects; (2) indirect violence from falls without direct trauma over the kidney area, as on the feet or buttocks, or an injury to some distant part of the abdomen, producing an increase in intrarenal tension; (3) muscular action, such as sudden bending and heavy lifting.

Schenck[2] reported forty-two cases in Los Angeles County Hospital from 1929 to 1933. Pratt[3], in a review of records of the Charity Hospital of New Orleans, found slightly more than one case of ruptured kidney per year. The incidence of traumatic rupture is low (from 0.04 to 0.25 per cent of surgical admissions), but according to McNeil[4] and others such injuries are on the increase.





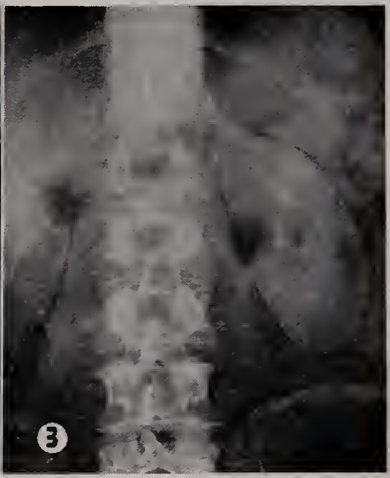


Fig. 1. Foentgenogram at time of injury.
Fig. 2. Shows dye at lower part of kidney.

Fig. 3. Shows normal kidney.

In over 105,000 admissions covering a ten-year period at King County Hospital, Seattle, there were a total of twenty-three cases of ruptured kidney and twenty-four of contused kidneys. Of the ruptured kidneys, sixteen were unmistakable cases, diagnosed by operation, autopsy or positive roentgen findings. Two of these had also a ruptured spleen.

DIAGNOSIS

The degree of rupture varies and only those cases, in which there is extrarenal bleeding with hematoma, should be classed as ruptured kidney. The symptoms are shock, pain and tenderness over the kidney and hematuria. The signs are rigidity, abnormal mass in the loin and ecchymosis. The symptoms are variable and inconsistent but significant. Shock may be present or absent, primary or delayed, severe or mild. Pain is usually constant for the first few days, but its location may vary. It is usually accompanied with tenderness. Hematuria may be unusually mild or severe. It may be intermittent. A tender mass of hard and uniform consistency may reach to the midline and down to the umbilicus.

Due to very little apparent relationship between severity of the symptoms and the tear in the kidney, aside from evidence of a large hemorrhage, some form of urologic study is needed. A kidney, ureter and bladder roentgen picture and an intravenous urographic study are both safe and applicable diagnostic procedures. Cystoscopy and ureteral catheterization may be done to rule out or confirm bladder or ureteral pathology. Retrograde pyelograms may show perirenal infiltration of the opaque medium.

TREATMENT

Shock may be combatted at once, the best method available being used. Blood transfusions combat the shock arising from massive hemorrhage better than anything else and in presence of increasing anemia and rapid pulse an operation should be performed, the type of operation being governed by the presence or absence of abdominal symptoms. If there is no sign of extensive homorrhage or grave shock, intravenous pyelography can be done which

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[1] Squier, J. B.: Modern Urology, H. Cabot, Vol. II, Lea and Febiger, Philadelphia, 1942.

[2] Schenck, G. F.: Traumatic Rupture of Kidney, California and West. Med., 40:341-346, May, 1934.

[3] Pratt, J. G.: Traumatic Rupture of Kidney, South. M. J., 27:809-812, Sept., 1934.

[4] McNeil, W. H., Jr.: Traumatic Injuries of Kidney and Ureter, Internat. J. Med. & Surg., 46:6-10, Jan., 1933.

will show the presence and function of the uninjured kidney. A traumatic rupture of a congenital solitary kidney has been reported[5] and a number of cases have been reported in which the only kidney has been removed. A kidney has been severed from its vessels and ureter and found lying loose in a large periniphritic abscess twenty days after the injury with recovery[6]. The patient may be carried over the first few days by supportive measures, until the injury can be carefully diagnosed and later a drainage operation may be done for localized infection.

CASE REPORT

A white male, aged 53, height 66 inches, weight 115 lb., was admitted to the hospital at 10 p.m. November 13, 1940, due to being injured in an auto accident. There was extensive laceration of the scalp in the frontal region, a fractured nose and many abrasions. The patient was in mild shock and conscious. He continually complained of pain in the right upper quadrant.

Treatment was instituted for a possible head injury. Catheterization showed slightly blood tinged urine. A few hours later a mass could be felt in the right upper quadrant. A scout film of the abdomen was taken (fig. 1), in which is seen a fracture of the twelfth right rib and a uniform shadow occupying the right upper quadrant which was indicative of extravasated fluid. His condition remained unalarming, pulse and blood pressure being normal and blood occasionally showed in the urine. The blood picture remained constant, although the hemoglobin was low (71 per cent Sahli) from the onset. An intravenous pyelography was done which showed extravasation of tye through the lower pole of the kidney with no outline of the lower calyx (fig. 2).

Due to the mass in the right upper quadrant slowly enlarging, tenderness persisting and sepsis appearing, drainage was done through a loin incision under sodium pentothal anesthesia on November 22. About a quart of chocolate colored fluid was found with dark blood clots. Two penrose drains were inserted. The postoperative course was smooth, the dark discharge gradually changing, so that in a few days urine alone appeared. The discharge gradually lessened and the patient went home on December 12, and returned to work on February 1, 1941.

He has been symptom-free since. On May 2, 1942, almost eighteen months following the injury, an intravenous renal study was made, showing right kidney outlined, with little or no change from normal in size and shape (fig. 3). The kidney has apparently healed and the lower calyx is visible. The left kidney has not undergone hypertrophy.

SUMMARY

A short discussion of the incidence, diagnosis and treatment of traumatic rupture of the kidney is presented. A case is reported in which use was made of roentgen ray and intravenous urography. The patient was given primary supportive treatment and later a drainage operation. Roentgen results of intravenous pyelography eighteen months later are shown.

SUBACUTE COR PULMONALE
DUE TO METASTATIC CARCINOMATOUS LYMPHANGIITIS OF THE LUNGS*

John J. Krygier, M.D.
AND
I. C. Brill, M.D.
PORTLAND, ORE.

Not infrequently extensive metastatic tumors of the liver, brain, lungs or other organs become clinically evident while the primary growth is so small as to remain undetectable. Less often a syndrome arising from metastatic carcinomatous invasion of some vital structure is encountered and results in death without the neoplastic nature of the lesions being suspected. Such a syndrome is "subacute cor pulmonale" recently described by Brill and Robertson.[1]

The clinical picture is predominantly that of right-sided heart strain and failure (cor pulmonale), developing over a period of three to eight weeks in an individual previously free from any cardiovascular or pulmonary disease. The cause of this rapidly developing right-sided heart strain is a metastatic carcinomatous invasion of the pulmonary vascular bed arising from an occult primary focus, usually in the lesser curvature of the stomach. In most of the reported cases, except in those in which gross evidence of malignant disease was present, the true nature of the process was not suspected during life. In many the neoplastic nature of the lesion was not recognized even at postmortem until the microscopic sections were examined. Yet it would seem that the clinical picture is sufficiently characteristic to permit an antemortem diagnosis in most instances.

REPORT OF CASE

A man, aged 48 years, an ex-plumber and road worker, who had been perfectly well until two months before admission, developed back pain in the lumbar region with radicular radiation. Later cough, dyspnea and orthopnea appeared; peripheral edema was noted one week before admission to the hospital.

On physical examination there were dyspnea, orthopnea, slight cyanosis and distension of the neck veins. The blood pressure was 110 systolic, 86 diastolic. The base of the left chest revealed impairment to percussion, decreased tactile fremitus and many resonating rales. Examination of the heart disclosed enlargement of the area of cardiac dullness to the left with filling of the waist. The heart sounds were distant and a protodiastolic gallop was heard. The liver extended six centimeters below the right costal margin and was smooth, firm and tender. Marked pitting edema of the lower extremities was present.

Examination of the blood showed hemoglobin 78 per cent, red blood cells 4,200,000, white blood cells 8,500. Sedimentation rate was 2 mm. in 15 minutes and 22 mm. in 45 minutes. Wassermann reaction was negative. Urine examination was essentially negative except for the presence of albumin.

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[5] Turton, J. R. H. and Williamson, J. C. F.: Traumatic Rupture of Congenital Solitary Kidney. Brit. J. Surg., 23: 327-331, Oct., 1935.

[6] Bethea, J. A. and Peterson, W. L.: Traumatic Rupture of Renal Pedicle with Many Complications. Mil. Surgery, 77:253-255, Nov., 1935.

*Read before a Meeting of North Pacific Society of Internal Medicine, Portland, Ore., March 7, 1942.

*From the Department of Medicine of Multnomah Hospital and University of Oregon Medical School.

[1] Brill, I. C. and Robertson, T. D.: Subacute Cor Pulmonale. Arch. Int. Med. 60:1043-1057, Dec., 1937.

Roentgenogram of the chest (fig. 1), taken shortly after 1100 cc. of fluid had been removed from the left pleural cavity, revealed hydropneumothorax on the left, deviation of the trachea to the right and a peculiar fine feathery infiltration symmetrically distributed throughout both lung fields.

The electrocardiogram (fig. 2) showed a neutral axis (plus 80 degrees when plotted on the Einthoven triangle), moderately tall and spiked P-waves in leads 2 and 3, and negative T-waves in all four leads.

The patient did not respond to therapy, became rapidly worse and died four days after admission to the hospital. The final clinical diagnosis was cor pulmonale, secondary to pulmonary fibrosis and pneumonoconiosis.

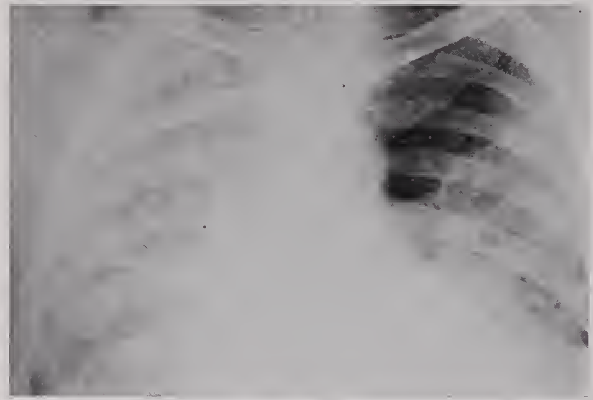

Fig. 1. Roentgenogram of the chest showing hydropneumothorax of the left chest (after removal of 1100 cc. of fluid), and a fine feathery infiltration symmetrically distributed throughout both lung fields. Heart appears enlarged to right and to left.

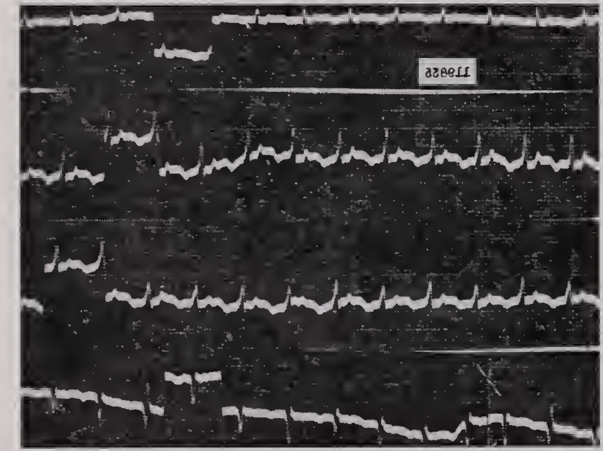

Fig. 2. Electrocardiogram showing normal axis deviation, moderately tall and spiked P-waves in leads 2 and 3 and negative T-waves in all four leads.

Gross postmortem examination. The external examination of the body was negative except for dependent edema. Approximately 500 cc. of ascitic fluid was present in the peritoneal cavity. The liver, which extended four cm. below the right costal margin, was blunted and showed nutmegging on section. The left pleural cavity lymphatics were distinctly outlined as narrow white interlacing strands. On section the pulmonary tissue was denser than normal. The surface was reddish-brown in color and numerous white lines stood out prominently dividing the lung into lobules. The pericardium and epicardium were dulled by fibrin deposit. The heart had a maximum transverse diameter of 12 centimeters. The right ventricle was hypertrophied and dilated, while the left was contracted and showed no hypertrophy. The cardiac valves were all normal. The rugal folds of the stomach were flattened and ironed out and there was a slightly "pebbled-leather" appearance to the gastric mucosa. A shallow ulcer approximately two centimeters in diameter was present along the lesser curvature. This appeared benign on gross inspection. The remainder of the organs and tissues showed no significant gross changes.

The anatomic diagnosis, made after the gross postmortem examination, was silicosis of the lungs with hypertrophy and dilatation of the right ventricle.

Microscopic postmortem examination. The lungs revealed diffuse metastatic carcinoma involving the lymphatic channels (fig. 3). The cells appeared chiefly in clumps, although in several areas a tendency to an adenomatous pattern was present. The pulmonary arteries showed increased thickness of the walls and in a few vessels the lumina were occluded by an endarteritis obliterans. The areas of carcinomatous lymphatic invasion showed perilymphatic and periarterial fibrosis. Sections of the epicardium showed fibrosis and metastatic tumor cell invasion. Tumor cell emboli of microscopic size were found in the spleen, liver, adrenals and kidneys. The liver revealed considerable chronic passive congestion. One section from the ulcer on the lesser curvature of the stomach revealed no definite malignant change. Unfortunately the remainder of the stomach had been discarded before histologic study was done and further search for a possible primary focus could not be made. Sections from the prostate showed only benign hyperplasia.

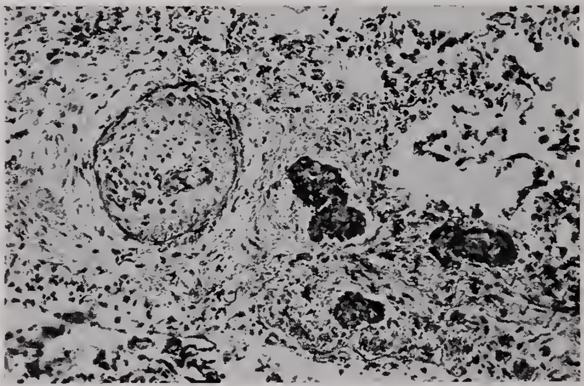

Fig. 3. Photomicrograph of a section of the lung showing a small pulmonary artery with canalized thrombus. Note the nests of carcinoma cells filling the lymphatics. Periarterial and perilymphatic fibrosis is present.

The corrected pathologic diagnosis after histologic study was: miliary carcinomatosis with carcinomatous invasion of the pulmonary lymphatics; secondary obliterative endarteritis and periarteritis; hypertrophy and dilation of the right ventricle (subacute cor pulmonale).

COMMENT

The presenting signs and symptoms of this case were chiefly those of right-sided heart failure. Clinically the cor pulmonale was interpreted as occurring on the basis of pulmonary fibrosis due to silicosis. After the gross postmortem examination

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2. Schmidt, M. B.: Die Verbreitungswege der Karzinome und die Beziehung generalisierter Sarkome zu den leukämischen Neubildungen, Jena, Gustav Fischer, 1903.

3. Wu, T. T.: Generalized Lymphatic Carcinosis ("lymphangiitis carcinomatose") of the Lungs. J. Path. & Bact. 43:61-76, July, 1936.

the pathologist concurred in this diagnosis. It was not until the microscopic sections were examined that the true nature of the process was recognized. Other observers have reported similar experiences.[1, 2, 3]

Therefore, it seems worthwhile to call attention again to the possibility of the clinical recognition of this lesion through emphasis of the *subacute* character of this type of cor pulmonale as was pointed out by Brill and Robertson. The diagnosis rests chiefly upon two factors: (1) the relative rapidity (3-8 weeks) with which manifestations of right-sided heart strain or failure become apparent, and (2) the absence of a history of preexistent cardiovascular or pulmonary disease.

Metastatic carcinomatous lymphangitis of the lungs with secondary obliterative pulmonary endarteritis is not an infrequent lesion. Since it was first described by Troisier[4] in 1874 numerous examples have been recorded in the European and American literatures.** In some instances the obstruction to the pulmonary circulation is not sufficient to cause strain on the right ventricle and no symptoms of right-sided heart failure develop. In others severe narrowing of the pulmonary vascular bed results in a rapidly developing cor pulmonale. In some of these cases gross evidence of malignant disease in the form of gastric, rectal or breast carcinoma readily throws light on the nature of the cardiopulmonary lesion.

However, in a certain number of cases symptoms of right ventricular strain or failure develop rapidly in the absence of any detectable primary growth from which metastasis might arise. It is for this latter group of cases that the designation "subacute cor pulmonale" has been suggested as an aid in diagnosis, although the term is equally applicable to those cases in which the rapidly developing cor pulmonale is associated with grossly evident malignant disease.

Roentgen examination of the lungs has been suggested as an aid in diagnosis.[4,5,8,9,10,11] Characteristic findings are described as "numerous streaks radiating toward the periphery from an enlarged hilar shadow." This sign was not found in the case here reported nor in three others observed by one of us (I.C.B.).

The electrocardiogram may be expected to develop the right axis deviation, as was noted in two of Greenspan's cases. However, this may be modified by a previously existing left axis which possibly accounts for the neutral axis noted in the present case.†

SUMMARY

A case of "subacute cor pulmonale" is reported arising from metastatic carcinomatous lymphangitis of the lungs with secondary obliterative pulmonary endarteritis and periarteritis. Clinical, pathologic and diagnostic features are discussed.

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4. Troisier: Cancer de l'estomac; Cancer secondaire des poumons. Lymphangite pulmonaire generali e. Bull. Soc. anat. de Paris, 48, 834, 1873; Recherches sur la lymphangite pulmonaire, These de Paris, No. 142, 1874.

**Among recent American publications with more or less complete lists of bibliographic references are those of Greenspan(5), Wu(3), Jarcho(6), Mason(7) and Schattenberg(8).

5. Greenspan, E. B.: Carcinomatous Endarteritis of Pulmonary Vessels Resulting in Failure of Right Ventricle. Arch. Int. Med. 54:625-644, Oct., 1934.

6. Jarcho, S.: Diffusely Infiltrative Carcinoma; Hitherto Undescribed Correlation of Several Varieties of Tumor Metastasis. Arch. Path. 22:674-696, Nov., 1936.

7. Mason, D. G.: Subacute Cor Pulmonale. Arch. Int. Med. 66:1221-1229, Dec., 1940.

†The negative T-waves in all four leads in this case might reflect the carcinomatous invasion of the pericardium.

8. Schattenberg, H. J. and Ryan, J. F.: Lymphangiitic Carcinomatosis of Lungs. Am. Int. Med. 14:1710-1721, March, 1941.

9. Schwarzmann, A.: Uber generalisierte carcinomatöse Lymphangitis der Lungen, Acta Radiol. 15:491-501, 1934.

10. Assman, H.: Klinische Boentgendiagnostik der innern Erkrankungen, third edition, F. C. W. Vogel, Leipzeig, 314, 1924.

11. Poppi, A.: Generalized Endolymphatic Pulmonary Carcinosis; Clinical Radiological and Pathological study. Arch. di pat. e clin. med. 14:487-509, May, 1935.

TUBERCULOSIS

An increase in the number of beds for tuberculosis patients in 1942 has been instrumental in the decrease in the number of deaths, statistics compiled by the National Tuberculosis Association reveal. A total of 97,726 beds are available throughout the United States and tuberculosis deaths for 1940, the latest year for which final figures are available, are 60,428. In 1938, the last year that a survey of facilities was made, there were 89,692 beds and 63,735 deaths. According to the Association, a standing of two or more beds per annual death should be maintained in order to satisfactorily carry on proper ocntrol of the disease. This standard has been met in only one-third of the states.

The source of the great bulk of infections with tuberculosis is a human carrier with a pulmonary cavity. While the home is probably the place of most childhood and some adult contacts, many primary infections and more reinfections must occur in the place of work. Nurses, physicians and attendants on the sick encounter a real occupational hazard from infection itself and this hazard should be accepted as incidental to the professional life while hospital management should assume the obligatiton of minimizing opportunities for mass infection. *Saranac Lake Symposium on Tuberculosis in Industry,* Saranac Lake, June, 1941.

All evidence indicates that tubercle bacilli live a very short time in rooms well supplied with unfiltered daylight. In the dosages in which they are apt to be spread by trained patients of a well-run institution, they probably do not survive in infectious quantities more than a few hours. In absolute darkness they may live several months. C. Richard Smith, *Amer. Rev. of Tuber.,* March, 1942.

To find anything one should look for it. Every case of tuberculosis found and put under treatment stops short of a possible source of spread of this disease whose ramifications are more widespread than a chain-letter. Every case of tuberculosis found in the early stage gives that person a much greater chance for recovery than if it is a late stage of the disease. J. L. Gompertz, M.D., *Bull. Alameda Co. Tuber. and Health Assn.,* March, 1942.

STATE SECTIONS

OREGON STATE
MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING
PORTLAND, SEPT. 12-13, 1942

OREGON STATE MEDICAL SOCIETY

SIXTY-EIGHTH ANNUAL MEETING OF HOUSE OF DELEGATES

Although the sixty-eighth annual session of Oregon State Medical Society has been cancelled, the House of Delegates will hold its regular meeting in Portland, September 12-13. All members of the society are invited to attend this meeting and thus familiarize themselves with the multiplicity of their interests which are conducted by the House of Delegates

PROGRAM

SATURDAY, SEPTEMBER 12

9:00 a.m.—Breakfast of the House of Delegates.
12:00 m.—Luncheon.
2:00 p.m.—Meeting of the House of Delegates.

SUNDAY, SEPTEMBER 13

9:00 a.m.—Breakfast Meeting of the House of Delegates.
10:00 a.m.—General Society Business Session and Election of Officers.

PORTLAND ACADEMY OF MEDICINE

The program of papers as prepared for the preliminary program has been cancelled, with the exception of those contributed through the courtesy of the Portland Academy of Medicine to be presented by Dr George E. Fahr, Professor of Internal Medicine, University of Minnesota Medical School. These addresses will constitute a program by the Academy independently of the House of Delegates and business meetings of the State Society.

The subjects of these addresses are presented with the dates for which they were scheduled in the preliminary program. Notice will be duly given, if the dates of delivery are changed from those herewith included.

PROGRAM

TUESDAY, SEPTEMBER 8

Auditorium of Medical School Library Building
8:00 p.m.—"What is Congestive Heart Failure?"

WEDNESDAY, SEPTEMBER 9

Auditorium of Medical School Library Building
8:00 p.m.—"The Rational Treatment of Congestive Heart Failure."

THURSDAY, SEPTEMBER 10

Auditorium of Medical School Library Building
8:00 p.m.—"The so-Called Irritable Heart of the Soldier."

STATE BOARD of MEDICAL EXAMINERS

The Oregon State Board of Medical Examiners met on July 24 and, in addition to routine business and reports of the Board, ordered the issuance of the following licenses to practice medicine and surgery based upon reciprocity: Donald Marion Bramwell, formerly of Missouri, now located at the Swan Island Shipyards; John Bertram Oliver, formerly of Washington, now in military service; Theodore Maurice Bischoff of Portland, now in military service; Frank Jerome Brown, now located at St. Paul, Minnesota; Roscoe Edward Conklin, formerly of Minnesota, now located in Portland; John Edward Field, formerly of Kentucky, now located at Sheridan; Knox H. Finley, formerly of Massachusetts, now located at the University of Oregon Medical School; Thomas Laurin Gritzka, with the United States Public Health Service in Portland; Gordon Christensen Hackett, now located at Longview, Washington; Peter Rich Johnston, formerly of Clayton, Missouri; Tyrrell Glen McDougall, now located at Chicago, Illinois; Joseph Wyckoff Nadal, formerly of Ann Arbor, Michigan, now located at Lebanon, Oregon; Philip Selling of Portland, now in military service; Roscoe Clarence Wilson, formerly of California, now located in Salem; and William Herman Zavin, now located in Portland.

The Board also canvassed the grades of the special examination held April 22-24, in which the following candidates were successful and were issued licenses to practice medicine and surgery: Hollis LeRoy Ahrlin, John Michael Boyer, Charles Wetzel Browning, Kenneth Jackson Cales, Winfred Howard Clarke, Douglas George Cooper, Frederic Davis, Earl Wedle Douglas, Thomas James Fox, Eva Labelle Gilbertson, Robert Jarvis Gould, Paul Gottlieb Hafner, James Charles Kennedy, Marion Vorpe Klingler, George Clinton McCallum, Jack Veness Newman, Marjorie Jane Noble, Theodore James Pasquesi, James Gray Perkins, Robert James Reed, Raymond Murton Reichle, Robert Paul Schefter, Florian Julian Shasky, Herman Fred Vehrs and John Sydney Rodda.

Night hearings in revocation proceeding now pending before the Board have been scheduled for September and will be held before a reference committee consisting of Drs. L. S. Besson and H. L. Blosser.

The next meeting of the Board will be held October 24.

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING, SEATTLE, SEPT. 12-13, 1942

WASHINGTON STATE MEDICAL ASSOCIATION

FIFTY-THIRD ANNUAL MEETING OF HOUSE OF DELEGATES

SEPTEMBER 12, 13, OLYMPIC HOTEL, SEATTLE

Wilmot D. Reed, Speaker, Presiding

Agenda

Saturday, September 12

3:30 p.m.—Call to Order by Speaker.
Roll Call.
Presentation, correction and adoption of minutes of Fifty-Second Annual Meeting.
Report of Credentials Committee.
Appointment of Committees by Speaker:
  1. Resolutions Committee (3)
  2. Credentials Committee (3)
  3. Committee on 1943 Meeting (3)
  4. Special Committees
Report of Officers:
  President's Message and Report of Board of Trustees.
  Report of Secretary-Treasurer.
  Reports of Delegates to A.M.A.
    John H. O'Shea
    Frank H. Douglass (Alternate to R. L. Zech)
  Report of Counsel: Mr. William T. Laube.
Report of Standing and Special Committees:
  1. Executive Committee: R. L. Zech, Chairman
  2. Finance Committee: V. W. Spickard, Chairman
  3. Graduate Medical Education and Hospitals: Homer D. Dudley, Chairman
  4. Industrial Insurance and Health: H. T. Buckner, Chairman
  5. Maternal and Child Welfare: H. H. Skinner, Chairman
  6. Medical Defense: Homer D. Dudley, Chairman
  7. Medical Economics (No Report)
  8. Neoplastic: Charles B. Ward, Chairman
  9. Publication: James M. Bowers, Chairman
  10. Public Health and Sanitation: Donald G. Evans, Chairman
    a. Diabetes
    b. Laboratory Medicine
    c. Social Hygiene
  11. Public Laws: W. B. Penney, Chairman
  12. Public Relations: Frank H. Douglass, Chairman
  13. Scientific Work: R. E. Mosiman, Acting Chairman
  14. Study of Medical Care: A. P. Duryee, Chairman
  15. Tuberculosis: B. F. Francis, Chairman
  16. Woman's Auxiliary Annual Report

NOTE: Resolutions Committee will meet in room announced by speaker following today's meeting of House of Delegates.

Dinner Announcement

A no-host dinner, stag, informal, will be held for all members of House of Delegates, Board of Trustees and others in honor of the physicians in the armed forces. Junior Ballroom, Olympic Hotel, 7:30 p.m.

Sunday, September 13

11:00 a.m. Call to Order by Speaker
Roll Call
Induction of President, Albert P. Duryee
Report of Committees
Election of Officers (and vacancies):
  1. President-Elect
  2. Vice President
  3. Speaker
  4. Delegate to A.M.A., (1) Two year term.
  5. Alternate Delegate to A.M.A., (1) Two year term.
  6. Secretary-Treasurer, Three year term.
  7. Assistant Secretary-Treasurer, One year term.
  9. Trustee (Eastern Washington), (1) Vacancy on Death of Dr. A. E. Gerhardt. Unexpired term, one year.
  10. Trustees (Western Washington), (2) Two year terms.
  11. Finance Committee, (1) Three year term.
  12. Election of Committee on Publication (3) Nominated by Board of Trustees.
  13. Selection of City for 1943 Meeting.
  14. Unfinished or new business.
  15. Adjournment.

MEETING OF BOARD OF TRUSTEES

Saturday, September 12

1:30 p.m.
  1. Call to Order and Roll Call.
  2. Reading of Minutes, May 24, 1942.
  3. Report of Secretary-Treasurer.
  4. Communications.
  5. Resignations:
    a. H. T. Buckner, called to active duty.
    b. Frank H. Douglass, called to active duty.
  6. Industrial Health Study.
  7. Review of Agenda, House of Delegates.
  8. Clark County physicians vs. Kaiser Shipyards, Vancouver.
  9. Malpractice insurance re physicians in service.
  10. Old Age medical care on state-line border cases.
  11. License Department re doctor shortage.
  12. 1942-43 Political and Legislative review.
  13. Initiative 151.
  14. Report by Mr. Wm. T. Laube, Legal Counsel.
  15. New Business.
  16. Adjournment.

MEMBERS OF HOUSE OF DELEGATES

Chelan—J. E. Gahringer, Wenatchee; R. T. Congdon, Wenatchee.

Clallam—J. L. McFadden, Port Angeles; D. E. McGillivray, Port Angeles.

Clark—C. B. Cone, Vancouver; H. M. Wiswall, Vancouver.

Cowlitz—J. F. Christensen, Kelso; C. J. Hoffman, Woodland.

Grays Harbor—M. P. Graham, Aberdeen; E. L. Calhoun, Hoquiam (in service).

Jefferson—R. S. Crist, Port Townsend; C. M. Schaill, Port Townsend.

King—R. N. Dillon, Seattle (in service), W. B. Seelye, Seattle, J. W. Baker, Seattle, Martin Norgore, Seattle, H. E. Nichols, Seattle, J. E. Hunter, Seattle, C. A. Regan, Seattle, P. R. Rollins, Seattle, C. W. Knudson, Seattle, E. A. Nixon, Seattle, J. H. Berge, Seattle; H. S. Haven, Seattle.

Kitsap—J. E. Haddon, Bremerton; H. E. Wilson, Port Orchard.

Kittitas—W. A. Taylor, Ellensburg.

Lewis—A. E. MacMillan, Chehalis; J. E. Toothaker, Centralia.

Lincoln—L. F. Wagner, Harrington; J. E. Anderson, Wilbur.

Okanogan—L. S. Dewey, Okanogan; T. J. McCain, Omak.

Pierce—C. R. McCreery, Tacoma, S. M. MacLean, Tacoma, E. W. Janes, Tacoma, J. W. Read, Tacoma (in service); C. F. Engels, Tacoma, R. D. Wright, Tacoma,

F. R. Maddison, Tacoma, W. C. Cameron, Tacoma (in service).

Skagit—C. M. Hunter, Sedro Woolley; H. E. Cleveland, Burlington.

Snohomish—C. B. Jones, Everett, O. A. Thomle, Everett.

Spokane—A. O. Adams, Spokane, A. F. Cunningham, Spokane, D. A. Palmer, Spokane, C. A. Veasey, Jr., Spokane; W. E. Grieve, Spokane, H. P. Lee, Spokane, H. E. Rhodehamel, Spokane, J. W. Mounsey, Spokane.

Thurston-Mason—K. L. Partlow, Olympia; E. E. Jones, Olympia.

Walla Walla—Elmer Hill, Walla Walla; P. D. Brink, Pomeroy.

Whatcom—W. C. Moren, Bellingham, G. F. Cook, Bellingham; L. A. Greenwood, Bellingham, H. C. Keyes, Bellingham.

Whitman—F. A. Bryant, Colfax; P. H. Beppler, Pullman.

Yakima—B. C. Koreski, Yakima, L. S. Harris, Yakima; W. S. Ginn, Yakima (in service), V. E. Johnson, Yakima.

POSTGRADUATE LECTURES

Sponsors: University of Washington Extension Course, King County Medical Society, Seattle Academy of Medicine.

This will be the only course of postgraduate lectures scheduled for the coming autumn.

All members of the Washington State Medical Association are cordially invited as well as all men serving in the military services of the United States.

The program is to be given by Dr. Hans Lisser, San Francisco, Clinical Professor of Medicine, University of California Medical School.

11:00 a.m.—"The Indications for and Methods of Administering Male Hormone Preparations." University of Washington.

1:30 p.m.—"Clinical Experiences with the Newer Improved Female Sex Hormone Preparations." University of Washington.

6:30 p.m.—"Obesity: Discussion of its Problems and Management." Rainier Club.

No host dinner $2. Those expecting to attend should mail their reservations directly to the Rainier Club and *include their checks for* $2. The tickets will be issued at the Club. It is urged that as many of those expecting to attend as possible make their reservations as above mentioned to assist the Club in planning for the dinner.

DEPARTMENT OF HEALTH

PERSONNEL FROM STATE DEPARTMENT OF HEALTH IN WAR SERVICE, AND THOSE SERVING IN THE STATE

Personnel of State Department of Health Serving With the Armed Forces

Physicians

R. H. Fletcher, Assistant Director.

J. W. Haviland, Chief of Crippled Children's Services.

L. A. Dewey, Chief of Epidemiology and Venereal Disease Control.

Engineers

Roy M. Harris, Chief of Public Health Engineering.

Paul Seufer, Assistant Public Health Engineer.

Robert Leaver, Assistant Public Health Engineer.

Robert Sylvester, Assistant Public Health Engineer.

Norman Martinsen, Community Sanitation Engineer.

Civilian Protection Assignments to Personnel of State Department of Health

Emergency Medical Service

State Medical Officer for Civilian Defense, Donald G. Evans.

Assistant State Medical Officer for Civilian Defense, Arthur E. Lewis.

Emergency Water Supply Program

State Emergency Water Supply Coordinator, Max S. Campbell.

Assistant State Emergency Water Supply Coordinator, Wilson F. Bow.

Assistant State Emergency Water Supply Coordinator, Emil Jensen.

Assistant State Emergency Water Supply Coordinator, Robert Stockman.

Protection Against War Gases

(As detailed by O. C. D.)

State Gas Officer, Max S. Campbell.

New Division Chiefs in State Department of Health

Cedric Northrop, Chief of Tuberculosis Control.

Dr. Northrop joined the staff on December 9, 1941, bringing with him a considerable experience in tuberculosis management.

Harold L. Lawrence, Chief of Venereal Disease Control.

Dr. Lawrence of the United States Public Health Service joined the staff on June 15, 1942, bringing with him a considerable experience in venereal disease control.

Albert Bailey, Chief of the Division of Vital Statistics.

Dr. Bailey joined the staff on August 8, 1942, bringing with him a considerable experience in statistical research.

Chief Milk Sanitarian in the State Department of Health

Dr. Frank Crews joined the staff on July 1, 1942. He fills the vacancy created by the resignation of Roy Wiley who left the Department to assume responsibilities in milk plant operation at Fort Lewis. Dr. Crews brings with him a considerable experience in milk sanitation.

Restaurant Sanitarian in the State Department of Health

A. C. Robinson joined the staff on June 1, 1942, to head up the Department's responsibility in advisory supervision of restaurant sanitation. Before war was declared, this responsibility was discharged by the Department's engineers. Since war was declared the engineers have been saddled with additional war-related responsibilities.

MEDICAL NOTES

Hospital Burns. Fifty patients, some in serious condition, were removed to safety July 31 when fire swept through the roof and attic of the four-story St. Johns Hospital in Port Townsend. Plans for reconstruction have already started.

Confederate Honored. The new army hospital under construction in Walla Walla will be named McCaw General Hospital in honor of Dr. James Brown McCaw who had a brilliant record of service to the Confederacy during the Civil war.

Hospital Taxes. Hospitals of Seattle, which have heretofore enjoyed exemption from taxation on the theory that they are charitable institutions, are to be taxed in the future according to King County officials. It is expected that the hospitals involved will take the issue to court.

Hospital Leased. The state's Soap Lake Buerger's disease hospital has been leased to the U. S. Army Air Corps for the duration of the war. The hospital was built after long campaigning for it by central Washington legislators. It failed to draw sufficient patients, however, to justify its continuation.

Seeks Federal Grant. Renton, bowled over by the tremendous influx of new defense workers, has passed a resolution seeking federal aid for the erection and maintenance of a hundred-bed hospital.

Tri-County Tuberculosis Hospital. County commissioners and prosecuting attorneys of Cowlitz, Lewis and

Pacific counties have worked out plans for the operation of a tri-county tuberculosis hospital. The former Lewis county old people's home near Chehalis is being converted into the hospital which will have accommodations for sixty patients.

King County Hospital Wins Laurels. A survey conducted by the St. Louis, Missouri, department of finance has reported that King County Hospital in Seattle is "one of the most efficient and probably the best managed" institution of its kind in the United States.

Joint County Health Setup. Further evidence that county government many times duplicates services is presented by an announcement that Jefferson and Clallam counties have decided to merge health facilities. Emil E. Palmquist of Port Townsend will head the combined department.

Steilacoom Overflows. Due to the fact that war conditions make enlargement of Western State Hospital at Fort Steilacoom impossible at this time, about fifty mental patients will be transferred to each of the veteran's homes at Retsil and Orting. Only mild cases will be transferred. They will be housed and staffed separately from the veterans.

Hospital Addition. It is reported that construction will begin soon on a nurses' home for St. Peters Hospital in Olympia, to cost $124,000.

New Health Officer. Skagit county has a new health officer, W. L. Jackson of Burlington, named to succeed W. B. King who has been called into service.

New Locations. Donald V. Andersen, who formerly practiced in Yakima, has opened an office in the new Admiral Theater building in Bremerton. In the same building, S. N. Colliver, formerly of Seattle, will practice eye, ear, nose and throat surgery. J. Earl Taylor, who has been assistant Yakima county-city health officer, has entered private practice with the Sherwood Clinic in Kirkland. Also in Bremerton A. F. Spanton of Toppenish has opened a new office. In Toledo, F. J. Hackney of Michigan has taken over the practice of F. L. Wood.

OBITUARIES

Dr. Frank Paine Witter, aged 81 years, died June 14 at Tacoma. He graduated from University of Michigan Medical School in 1887. He was a pioneer physician and business man of Rockford but later moved to Spokane where he had practiced for thirty-five years.

Dr. Walter S. Bardwell, aged 63 years, died July 4 in Newport of cerebral hemorrhage. He graduated from Northwestern University Medical School in 1907, and practiced in Othello and Spokane before moving to Rockport in 1921.

Dr. William R. Blankenship, aged 81 years, died July 24 in Seattle. He practiced in Walla Walla for over twenty-five years, retiring five years ago. He graduated from Missouri Medical College, St. Louis, in 1883 and practiced medicine in that state for many years before coming to Washington.

Dr. Joseph Edward Preucel, aged 74 years, died after a long illness July 13 in Colfax. He practiced in the Palouse country for over forty-five years. He graduated from Rush Medical College in 1895. He served as a captain in the Medical Corps during the first World War.

WOMAN'S AUXILIARY

The annual meeting of the executive board of the Woman's Auxiliary to Washington State Medical Association was held at Olympic Hotel, Seattle, August 17, with president Mrs. James H. Berge presiding.

Reports were presented from various committees, dealing with the business of the Auxiliary. Officers were elected for the ensuing year, the president being Mrs. Emmett L. Calhoun of Grays Harbor.

The following resolutions were presented and adopted:

RESOLUTIONS

Whereas: Daisy Searles Mosiman is eminently qualified to represent the ideal physician's wife, mother and community leader; and

Whereas: She has successfully fulfilled the duties of the office of President of the Woman's Auxiliary to King County Medical Society; and

Whereas: Under her brilliant and understanding leadership as President, the Woman's Auxiliary to Washington State Medical Association won national recognition for its achievements; and

Whereas: As chairman of the National Public Relations Committee, she urged auxiliary members throughout the United States to participate individually in worthwhile community endeavors, and stimulated County and State Auxiliaries to promote and maintain effective relationships with other organizations in order to further auxiliary aims; and

Whereas: She was the first from the western states to be elected to the Presidency of the Woman's Auxiliary to American Medical Association, in which office her record of distinguished and untiring service has merited just commendation; and

Whereas: Without sacrificing the immediate necessity, she has cautiously, yet fearlessly, guided our organization toward its ultimate goals; and

Whereas: We, as auxiliary members and as American women, are proud to recognize her ability and claim her friendship; therefore be it

Resolved: That Daisy Searles Mosiman be nominated an Honorary Life Member of the Woman's Auxiliary to Washington State Medical Association.

Whereas: Alma Whitacre has completed her eleventh consecutive year of service as Organization Chairman of the Woman's Auxiliary to Washington State Medical Association; and

Whereas: With the help of Dr. Horace J. Whitacre, who secured permission from the several county medical societies, she was instrumental in creating fourteen County Auxiliaries which she served as the first State President of the Woman's Auxiliary to Washington State Medical Association; and

Whereas: As First Vice-President of the Woman's Auxiliary to American Medical Association, she was also National Chairman of Organization, giving generously of her wide experience and knowledge to Auxiliary members in every state; and

Whereas: In consistently and faithfully working to establish Auxiliaries in every County throughout the State and the United States, she has brought together numerous groups of women whose lasting friendships will forever be a tribute to her capable efforts and gracious personality; therefore, be it

Resolved: That, in recognition of her invaluable services, the Woman's Auxiliary to Washington State Medical Association express its deep appreciation and gratitude to Alma Whitacre.

Whereas: The United States is engaged in an all-out effort against the Axis forces; and

Whereas: The medical profession of the State of Washington is cooperating wholeheartedly with the government in its efforts to supply adequate medical care for all our citizens, both civilian and military; therefore, be it

Resolved: That the Woman's Auxiliary to Washington State Medical Association reaffirms its support of the government of the United States and pledges anew its loyalty to the Washington State Medical Association.

Whereas: The members of the Advisory Council of the Woman's Auxiliary to Washington State Medical Association graciously consented to advise and guide our Auxiliary in all its activities during the past year, and most generously fulfilled that pledge; therefore be it

Resolved: That deep appreciation be expressed by the Auxiliary to Dr. George W. Cornett, President of Washington State Medical Association, to Drs. Homer D. Dudley, R. L. Zech and Vernon Spickard, members of the Advisory Council.

Whereas: The office of Washington State Medical Association has been available during the past year for the use of the Woman's Auxiliary; and

Whereas: Every courtesy and privilege has been extended by the office staff; therefore, be it

Resolved: That we extend our sincere thanks to Mr. Arthur Anderson, Executive Secretary of the Washington State Medical Association, and to Miss Grace McOuat and Miss JoJanette Gilbert, members of the office staff.

Whereas: Seattle newspapers and Northwest Medicine have generously provided space for printing of publicity for auxiliary activities; therefore, be it

Resolved: That the Woman's Auxiliary to Washington State Medical Association express its appreciation to the Seattle Times, the Post-Intelligencer, the Seattle Star, and to Dr. Clarence Smith, Editor of Northwest Medicine.

Whereas: The mortality of infants in the State of Washington is a little over one thousand the first year of life; and

Whereas: One-third of that number die the first day; and

Whereas: During the past twenty years the percentage of mortality the first month and the next eleven months has been greatly reduced; and

Whereas: The mortality percentage of those dying the first day has not changed at all since 1910; and

Whereas: During the war period, with shortage of nurses and fewer doctors, particular care will be necessary to lower this mortality rate; and

Whereas: More and more babies are being born in hospitals under increasingly better conditions; and

Whereas: We, as mothers, as well as being members of the Medical Auxiliary, are, therefore, doubly interested in this particular problem; be it

Resolved: That through the Maternal and Child Welfare Committee of the Medical Auxiliary an intensive study of this situation shall be made to ascertain the causes of our high mortality; also what means of provention are feasible. Be it further

Resolved: That in the course of this study and by means of a more understanding investigation, the Women's Clubs and other women's organizations such as the Parent Teachers Associations, the American Legion Auxiliaries, etc., be requested to take an active part in the way of investigation and education of their own membership as well as at large throughout the State; and be it further

Resolved: That the Auxiliary Committee on Maternal and Child Welfare shall in cooperation with the Maternal and Child Welfare Committee of the State Medical Association present their findings, analysis and recommendations yearly both to the State Medical Association and the State Auxiliary.

Mrs. George J. Vandenburg
Mrs. Leland S. Harris
Mrs. Souren H. Tashian
Resolutions Committee.

CLINICAL FORUM

PEDIATRIC PROBLEM

Infant B's mother's last menstruation was June 1, 1939, making the estimated date of delivery March 8, 1940. She was a para-IV. Her physician considered the mother was overdue when labor had not occurred by March 15. Consequently pituitrin was used to start pains. Labor was not long nor difficult. The baby, presenting as a frank breech, was delivered in that position. No analgesia nor anesthesia was reported. The baby weighed 4 lb., 15½ oz. Since she breathed feebly, resuscitation appeared necessary and carbogen and oxygen were used. She was placed in a Hess incubator the first three or four days.

The next four days she did not do well, vomiting ensued; she was unnaturally drowsy; respirations were irregular at times and cyanotic attacks persisted. On March 19 she expired.

What comments have you to make on this case, as to diagnosis and treatment?

COMMENTS ON OBSTETRIC PROBLEM IN CLINICAL FORUM OF AUGUST ISSUE

First commentator states: It is the custom of a number of excellent obstetricians to do an abdominal section as soon as the diagnosis of placenta previa has been made. The history of this case pointed very plainly to the fact that the mother did have placenta previa. Then the vaginal examination as reported proved beyond doubt what was present. Had the section been done at once, undoubtedly the baby would have been delivered alive and, although there is a certain mortality for a cesarean section, it would have been offset, I believe, in this instance by the fact that a living baby would have been the result.

Second commentator says: It is evident in this problem that the attending obstetrician felt that, since this was not a placenta previa centralis, the bleeding could be controlled by rupturing the membrane and from then on the process of birth would continue normally. As soon as the baby began to show signs of distress one would think at once that a coil of cord had come down in front of the head and was being pinched off by the presenting parts. Had the packing been removed (and perhaps was) and the cord not found to be prolapsed, then there must have been an underlying serious element which caused the baby so much distress.

Quick delivery would be the choice forced upon one to procure a live baby. Accouchement force would be out of the question because the placenta is in the cervical os and would be full of large blood vessels due to the presence of the placenta. They would tear through more easily than the rest of the cervical ring and severe bleeding would result.

It would take about an hour to get ready for a cesarean and to perform it. During that time the baby would almost surely die. If one were called in at this stage, the only thing possible would be to wait until the mother delivered herself spontaneously, and take what chances there might be for the baby.

Third commentator discusses the case as follows: My experience regarding such cases would perhaps seem quite radical to some of the later methods of watchful waiting in questionable cases of placenta previa. However, after thirty-eight years of obstetric practice and delivery of several thousand babies I am convinced that any woman having painless, causeless uterine bleeding during the last trimester should be considered a case of placenta previa or low placental attachment. With that diagnosis in mind I would strongly recommend a cesarean section as long as

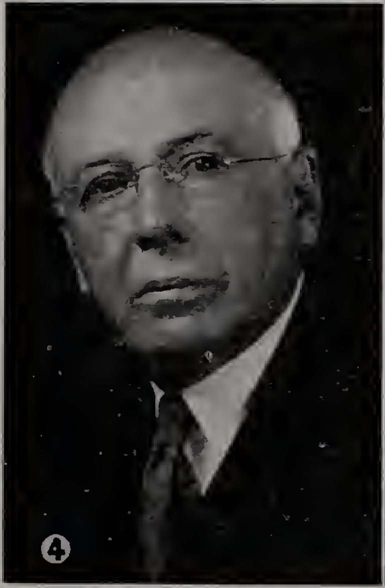
(*Continued on Page* 329)

IDAHO STATE MEDICAL ASSOCIATION

Fiftieth Annual Meeting, Sun Valley, September 17-19

GUEST SPEAKERS

From Faculty of University of Oregon Medical School



1. FRANK R. MENNE
Professor of Pathology

2. RAYMOND E. WATKINS
Professor of Obstetrics and Gynecology

3. LYLE B. KINGERY
Clinical Professor of Dermatology and Syphilology

4. JOSEPH B. BILDERBACK
Professor of Pediatrics

5. EDWIN E. OSGOOD
Associate Professor of Medicine

6. JOHN A. GIUS
Associate Professor of Surgery

ANNOUNCEMENT

As previously announced, the meeting this year will cover three instead of four days. In spite of rumors concerning the Navy taking over Sun Valley, this meeting will be held as scheduled. Hotel rooms will be available for all members and guests as at previous annual meetings. Reservations should be made at an early date.

A meeting of the House of Delegates will be held at 8 p.m., Wednesday, Sept. 16. F. M. Cole of Caldwell, representative of Procurement and Assignment Service, will speak at a noon hour to be announced later. A golf tournament will probably be held on the afternoon of Friday, Sept. 18. A program of moving pictures will probably be presented each evening in addition to whatever else may be scheduled.

As previously announced, the program of scientific papers will be presented by members of the faculty of Oregon University Medical School, unless otherwise indicated.

PROGRAM

Thursday, September 17

8:45 a.m.—President's Address, Report of Committees, Introduction of Guests, Announcements.

9:45 a.m.—"Therapeutic Thinking," Edwin E. Osgood, Associate Professor and Head of Division of Experimental Medicine.

10:30 a.m.—"Pathology of Lymph Nodes," Frank R. Menne, Professor of Pathology.

11:15 a.m.—"Present Status of Superficial Fungus Infection of the Skin," Lyle B. Kingery, Professor of Dermatology and Syphilology.

12:00 m.—The House of Delegates will probably meet at this hour, since there are no Round Table Luncheons scheduled.

2:00 p.m.—"Physical Fitness," Frank M. Sprague, Pediatrist, Boise.

2:45 p.m.—"Acrodynia," Joseph B. Bilderback, Professor of Pediatrics, with D. C. McDougall, Pocatello.

3:30 p.m.—"Surgical Conditions of the Abdomen in Infants and Children," John A. Gius, Assistant Professor of Surgery, and J.B. Bilderback, Professor of Pediatrics.

4:15 p.m.—"Management of Hemorrhage in the Latter Part of Pregnancy," Raymond E. Watkins, Professor of Obstetrics and Gynecology.

Evening, Banquet.

Friday, September 18

9:15 a.m.—"Cancer of the Uterus," Raymond E. Watkins.

10:00 a.m.—"Cancer of the Colon," John A. Gius.

10:45 a.m.—"Pathology of Cancer of the Stomach," Frank R. Menne.

11:30 a.m.—"Injection Treatment for Somatic Pain," John T. Wood, Couer d'Alene.

12:15 p.m.—Luncheon.

2:00 p.m.—"Symptoms of Pruritis," Lyle B. Kingery.

2:45 p.m.—"March of Pediatrics," Joseph B. Bilderback.

3:30 p.m.—"Differential Diagnosis of Coma," Edwin E. Osgood.

Evening, Stag Banquet.

Saturday, September 19

9:15 a.m.—"Surgical Conditions of the Abdomen in Infants and Children," Joseph B. Bilderback and John A. Gius.

10:00 a.m.—"Treatment of Prolapse of Uterus," Raymond E. Watkins.

10:45 a.m.—"Pathology of the Prostate Gland," Frank R. Menne.

11:30 a.m.—"Injuries to Knee Joint, Including Fracture," Glenn McCaffery.

12:15 —Luncheon.

2:00 p.m.—"Dermatologic Problems of the General Practitioner," Lyle B. Kingery.

2:45 p.m.—"Principles of Chemotherapy," Edwin E. Osgood.

3:30 p.m.—"Considerations in Treatment of War Wounds," John A. Gius.

Scientific Exhibits

The following exhibits have been arranged for and no doubt there will be many more.

F.M. Sprague, Boise. Movie, "Evaluation of Physical Fitness."

H. L. Schiess, Shelley. X-rays, "Sarcoma of the Pelvis."

E. V. Simison, Pocatello. Kodachromes, "E. E. N. T."

A. B. Pappenhagen, Orofino. X-rays, "Fractures."

H. E. Bonebrake, Wallace. X-rays, "Fractures."

Probably the Metropolitan Life Insurance Company's "Diabetes."

Technical Exhibitors

Shadel Sanitarium
Mead-Johnson & Company
Sego Milk Company
Morning Milk Company
Cutter
Harrower
John Wyeth & Son
Eli Lilly & Company
Physician's Supply of Salt Lake
Shaw Surgical Company
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CLINICAL FORUM

(*Continued from Page 326*)

the baby was viable or be prepared to operate at the very first symptom of labor, not waiting for the cervix to be dilated. This method may seem radical, but to me it gives both the mother and baby benefit of any doubt and the mortality risk would be no higher than by standing by, waiting development of a probably very serious condition.

If I were called in consultation at this stage after the membranes had been ruptured, the cervix dilated and the vagina packed in a para-IV with an adequate pelvis, I would consider the risk of cesarean section and subsequent peritonitis too dangerous for operation. Therefore, if called in consultation, I would undoubtedly recommend emptying the uterus as quickly as possible through the birth canal with deep anesthesia, preferably doing a version or forceps.

Fourth commentator would apply this treatment: Would I have conducted this case differently to this point? Yes. Due to the high mortality of both mother and fetus when a placenta previa is present, any patient having painless bleeding in the last trimester of pregnancy should be hospitalized immediately or be in readiness to enter a hospital if more than spotting occurs. Seventeen hours elapsed after the onset of labor with profuse flowing. While the time of dignosis of placenta previa was not stated, one would presumably infer that it was made on entrance to the hospital. In this case immediate cesarean section preceded by blood grouping and transfusion, if necessary, should offer the greatest opportunity of survival to both mother and infant.

Blood transfusion would probably be helpful. The packing might be removed and, if bleeding still continued, a version performed, bringing the leg and thigh down to act as a dilator and tampon against maternal hemorrhage, disregarding the outcome for the fetus. If the cervix was dilated, immediate version might be performed with the purpose of saving the fetus. Uterine packing might be necessary after delivery to prevent bleeding from the uterine segment and cervix. In either event the prevention of maternal bleeding should be the first consideration.

Fifth commentator holds these views:

I couldn't call consultation, inasmuch as the nearest physician is thirty-six miles from me, and a mother in this condition might die before such aid was obtainable. I would, however, deliver rapidly, usually by version. It might be done by high forceps, except that I do not like such a procedure, and do find a rapid version delivery possible to do within one to three minutes, if there is three fingers dilatation, and up to date I have had no harmful sequelae from this version and extraction of the infant. Often, after the version is complete and the feet and thighs extracted, it is possible to slow up the delivery somewhat, as the impact of the body tissues against the uterine wall will stop the bleeding placenta, but in such a case as here outlined with the infant in distress, I would continue the rapid extraction by version.

Conclusion of the case: The baby's heart tones became slower and slower until they were only 70 per minute; then weaker, and finally no heart tones could be heard. Two or three hours later, at 9:15 p.m., the mother was delivered of a still-born infant. Her puerperium was normal. She returned home in excellent condition on July 10.

Examination of the placenta showed that one-third of it at least had been detached. From this, one deduced that the baby was deprived of one-third of its oxygen intake. Loosening of the placenta and coming suddenly caused shock and therefore death. An autopsy was not obtained.

BOOK REVIEWS

Occupational Tumors and Allied Diseases. By W. C. Hueper, M.D. Assistant Director and Principal Pathologist, Warner Institute for Therapeutic Research, New York City. 896 pp. $8. Charles C. Thomas, Springfield, Ill., 1942.

Here is an exhaustive and authoritative analysis on this subject from all angles which should be welcomed by the many groups of workers, lay and professional, who could acquire the contained data only through laborious search along many channels. It is addressed by the author to the medical and legal professions, governmental agencies, legislative boards and committees, insurance companies and research workers, as all these have an interest in the relationship between tumor formations and occupations, including occupational environment in the broader sense. A third of the volume is devoted to tumors of the skin, while more than fifty pages, for instance, discuss tumors of the alimentary canal. In fact, no system of the body is free of neoplastic formation which may be due in some immediate or remote way to industrial occupation. The problem of cancer is dealt with in other than its industrial relations and its surgical and pathologic significance receives attention. This is a most desirable book for reference, where a critical analysis of all available evidence in relation to tumors and industry is clearly set forth.

H. D. Forbes.

A Bibliography of Aviation Medicine. By Ebbe Curtis Hoff and John Farquhar Fulton. Prepared for the Committee on Aviation Medicine, Division of Medical Sciences, National Research Council acting for the Committee on Medical Research, Office of Scientific Research and Development, Washington, D. C. 237 pp. $4.00. Charles C. Thomas, Springfield, Illinois, 1942.

In the past, primary emphasis in aviation has been placed on technologic developments of aircraft. Now the point has been reached where stresses on flight personnel tend to limit further development of aviation. Already literature pertaining to aviation has become so vast that a volume comprehending it has become a necessity for those interested in this subject. Since this medical aviation literature has been published in so many different languages, the task of classifying the titles of publications has demanded the time and attention of many investigators. It has been necessary to make a study of some eight hundred journal files, only about half of which were in the purely medical field.

This bibliography covers the world literature with 6,000 citations from American, British, German, French and Italian sources of information. It also covers literature from Japanese and Russian publications. A special difficulty was encountered in the study of publications from these two latter countries. References have been grouped according to subject matter, the authors' names being spelled as they appear in the original sources. All journals and books from which references have been taken are listed, as well as authors' names, each being presented alphabetically. All physicians connected with aviation medicine will find this an invaluable volume for reference.

Clinical Cardiology. With Special Reference to Bedside Diagnosis. By William Dressler, M.D. Attending Cardiologist, Israel Zion Hospital, New York, etc. With 1080 Illustrations. 692 pp. $7.50. Paul B. Hoeber, Inc., Medical Department of Harper & Brothers, Inc., New York, 1942.

This volume handles the subject of heart disease in an unusually practical manner. It consists of four parts and an appendix. Part I deals with methods of examination, outlining practical points in history, physical examination and general principles of electrocardiographic and roentgenologic examination of cardiac patients. Part II describes the general pathology of cardiac disorders. Chapters on general aspects of heart failure and disorders of cardiac rhythm are particularly good. There is a brief discussion of mechanisms of cardiac accommodations, angina pectoris, peripheral circulatory failure, pulsatory phenomena of chest wall, fainting and syncope of cardiac origin. Part III is a practical consideration of various types of heart disease, discussing incidence and etiology, pathology, symptoms and signs, diagnosis, course, prognosis and treatment of each type. Special laboratory data, as electrocardiograms and roentgenograms, are described in detail and frequently illustrated.

Part IV gives general aspects of heart disease in relation to marriage, pregnancy, surgery, anesthesia, etc., and a summary of some general principles. The appendix contains 294 summaries of important points to remember. They represent many practical ideas the author has formulated in years of experience in practice of cardiology.

E. G. Bannick

Standard Nomenclature of Disease and Standard Nomenclature of Operations. Edited by Edwin P. Jordan, M.D. 1022 pp. $4. American Medical Association, Chicago, 1942.

The purpose of this publication is to establish a logical nomenclature for permanent designations of diseases and operations. It was initiated in 1928, when the National Conference on Nomenclature of Disease was formed. The responsibility for its periodic revision was taken over by the American Medical Association in 1937. This is the third edition, although there have been several reprints. It is intended to include every disease which is clinically recognizable and to avoid repetition and overlapping. Where it is possible to do so, English terms are employed, although Latin and Greek are at times necessary. The method of classification is based on the portion of the body concerned, which is termed topographic, and cause of the disorder, which is etiologic. These elements are designated by numbers, separated by a hyphen. These numerical classifications are explained and can be understood by a careful study of the text.

In addition to the respective lists of diseases and operations which have been arranged with minute care, a disease index for each grouping offers ready reference to the proper clasification of each disease. A table of eponymic diseases lists the names of individuals which are associated with different diseases. This volume is intended especially for the use of hospitals and clinics in order that there may be established a uniform system of classification which will offer ready information to anyone familiar with the system. A study of the introduction and instructions to librarians is essential to comprehension of the purposes and execution of this standard nomenclature.

Stedman's Practical Medical Dictionary. Fifteenth Revised Edition with Etymologic and Orthographic Rules. By Stanley Thomas Garber, B.S., M.D., University of Cincinnati, College of Medicine. 1257 pp. $7.50. The Williams & Wilkins Company, Baltimore, 1942.

Advances in modern medicine produce so many new words and expressions that no physician can keep abreast of them unless he has access to the latest edition of a medical dictionary. Even the short period of two or three years demonstrates this fact and one will search in vain for certain words in common use which have not been published during this short period.

The present edition of this authoritative dictionary has been revised with addition of hundreds of new titles and subtitles. Special mention is made of additions to medical nomenclature in the field of vitamins, allergy and hematology. There has been a revision of the entire terminology of bacteria which has largely replaced that formerly in use. There is added a table of common microparasites pathogenic for man and certain animals. Following the authority in spelling of the pharmacopoeia the distinction has been retained between alkaloids ending in -ine and glucosides ending in -in. Other changes in spelling will be noted, as sulfur, employing f in place of ph. The appendix includes many tables of useful information which will be handy for easy references. This volume can be recommended as useful to any physician.

The National Formulary. Seventh Edition. Prepared by the Committee on National Formulary by Authority of the American Pharmaceutical Association. 690 pp. $6.00. American Pharmaceutical Association, Washington, D.C., 1942.

The two publications of this country containing authoritative information regarding drugs are the Pharmacopoeia and the National Formulary. The former is voluminous, entering with minute detail into everything concerning drugs, while the latter, a smaller volume, has condensed information, more comprehensive for the ordinary reader. It is well known that the average practicing physician has very little knowledge concerning the origin, composition and preparation of the drugs which he prescribes. It is true that this knowledge is the essential possession of the pharmacist, yet at times the physician feels an urge to acquire some of this information which is available by consulting this volume. Herein one will find explanations as to standards, official preparations, official testing, physical constance and posology. These are all facts concerning drugs, the knowledge of which is worthwhile. Drugs and preparations are presented in alphabetical order, easy of access, with condensed information.

Physical Chemistry for Students of Biochemistry and Medicine. By Edward Staunton West, Ph.D., Professor of Biochemistry in the University of Oregon Medical School. 368 pp. ~~$5.75~~. The Macmillan Co., New York, 1942. $5.

"Biochemistry is a composite branch of chemistry in which inorganic chemistry, analytical chemistry, organic chemistry and physical chemistry are focused upon the structure and function of protoplasm." Its importance is indicated by special courses in physical chemistry offered to premedical and biological students. The primary object of this book is to present selected phases of physical chemistry recognized as basic to an understanding of biological phenomena.

The basis of all life is called protoplasm and biochemistry is concerned with its composition and chemical properties. The entire field of animal biochemistry might be developed from consideration of the properties of protoplasm. Suggestions of the contents of this volume are indicated by titles of some of the chapters, such as: The Structure of Matter and Some Fundamental Chemical Principles; Osmotic Pressure; Acids, Bases and Buffers; The Determination of pH; Oxidation and Reduction. Comprehension of the contents of this book is conditioned upon knowledge in biochemistry and similar subjects. Possessing such information, one will appreciate its value.

* Correction, p. 366.

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

GRANTING COMMISSIONS TO PHYSICIANS

A recent communication from Dr. Frank H. Lahey, Chairman of Procurement and Assignment Service for Physicians, Dentists and Veterinarians, calls attention to the new regulations concerning granting of commissions to physicians as detailed from the Surgeon General's office. All physicians desirous of promotion in rank should familiarize themselves with these regulations which are herewith presented under date of August 22, 1942.

APPOINTMENT OF PHYSICIANS AS MEDICAL OFFICERS

The Surgeon General of the Army published detailed information concerning policies governing the initial appointment of physicians as medical officers on April 23, 1942. Necessary changes are given wide publicity at his request, in order that the individual applicants and all concerned in the procurement of medical officers may know the status of such appointments.

The current military program provides for a definite number of position vacancies in the different grades. The number of such positions must necessarily determine the promotion of officers already on duty and, in addition, the appointment of new officers from civilian life. Such appointments are limited to qualified physicians required to fill the position vacancies, for which no equally well qualified medical officers are available. Such positions calling for an increase in grade should be filled by promotion of those already in the service, insofar as possible and not by new appointments.

If this policy is not followed, it would definitely penalize a large number of well qualified Lieutenants and Captains already on duty by blocking their promotions which have been earned by hard work. In view of these facts, it has been deemed necessary to raise the standards of training and experience for appointment in grades above that of First Lieutenant.

With this in view, the Surgeon General has announced the following policy which will govern action to be taken on all applications after September 15, 1942:

All appointments will be recommended in the grade of First Lieutenant with the following exceptions:

CAPTAIN. 1. Eligible applicants between the ages of 37 and 45 will be considered for appointment in the grade of Captain by reason of their age and general unclassified medical training and experience.

2. Below the age of 37 and *above* the age of 32, *consideration* for appointment in the grade of Captain will be given to applicants who meet all of the following minimum requirements:

a. Graduation from an approved medical school.

b. Internship of not less than one year, preferably of the rotating type.

c. Special training consisting of 3 years residency in a recognized specialty.

d. An additional period of not less than 2 years of study and/or practice limited to the specialty.

3. Eligible applicants who previously held commissions in the grade of Captain in the Medical Corps (Regular Army, National Guard of the United States, or Officers Reserve Corps) *may be considered* for appointment in that grade provided they have not passed the age of 45 years.

Major. 1. Eligible applicants between the ages of 37 and 55 *may be considered* for appointment under the following conditions:

a. Graduation from an approved school.

b. Internship of not less than one year, preferably of the rotating type.

c. Special training consisting of 3 years residency in a recognized specialty.

d. An additional period of not less than 7 years of study and/or practice limited to the specialty.

e. The existence of appropriate position vacancies.

f. Additional training of a special nature of value to the military service, in lieu of the above.

2. Applicants previously commissioned as Majors in the Medical Corps (Regular Army, National Guard of the United States, or Officers Reserve Corps) whose training and experience qualify them for appropriate assignments may be *considered* for appointment in the grade of Major provided they have not passed the age of 55.

Lieutenant Colonel and Colonel. In view of the small number of assignment vacancies for individuals of such grade, and the large number of Reserve Officers of these grades who are being called to duty, such appointments will be limited. Wherever possible, promotion of qualified officers on duty will be utilized to fill the position vacancies.

Much misunderstanding has arisen concerning recognition by Specialty Boards and membership in specialty groups. It will be noted that mention is not made of these in the preceding paragraphs. This is due to the variation in requirements of the different Boards and organizations. Membership and recognition are definite factors in determining the professional background of the individual, but are *not* the deciding factors, as so many physicians have been led to believe.

The action of the Grading Board, established by The Surgeon General in his office, is final in tendering initial appointments. Proper consideration must be given such factors as age, position vacancies, the functions of command and original assignments. All questionable initial grades are decided by this Board. Due to the lack of time, no reconsideration can be given.

There are in the age group 24-45 more than a sufficient number of eligible qualified physicians to meet the Medical Department requirements. It is upon this age group that the Congress has imposed a definite obligation of military service through the medium of the Selective Service Act. The physicians in this group are ones needed *now* for active duty. The requirements are immediate and imperative. Applicants beyond 45 years may be considered for appointment only if they possess special qualifications for assignment to positions appropriate to the grade of *major* or above.

* * *

PERNICIOUS MEDICAL PUBLICITY

Much information concerning diseases and their treatment is imparted to the public through the daily press and magazines. Through these media valuable suggestions for the promotion of good health are published for general readers. At times, however, health of readers may be jeopardized from accepting statements concerning a disease which are partially true or absolutely false and pernicious. An outstanding example of the latter was exhibited in the September issue of *Reader's Digest* which published an article by Paul de Kruif announcing the successful administration of one day's treatment for the cure of syphilis.

Books and articles on medical matters have been published by de Kruif which have contained useful information concerning diseases and public health matters, by reason of which he has been accepted by a large following as an authority concerning matters coming from his facile pen. Therefore, when he proclaims to the "million readers" of *Reader's Digest* that it is no longer necessary for the syphilitic victim to endure months of distressing treatment, but he can be cured by one day's therapy, such a statement is greeted with enthusiasm by those afflicted with this disease. He does not state that this form of treatment has been in the experimental stage for a year, and has not been accepted by the medical profession as an efficient procedure. The reader gains the impression that this form of treatment has been successfully administered by a group of Ohio physicians and they are responsible for its successful employment.

According to a statement in *The Journal of the American Medical Association,* physicians in many parts of the country have been deluged with letters and inquiries from syphilitics demanding that they shall have the benefit of this quick treatment and cure of their disease. Not only is such a false statement detrimental to medical practice, but it is a cruel and heartless imposition inflicted upon the victims of this disease. It seems amazing that a magazine with the standing and following of *Reader's Digest* should publish such an erroneus paper dealing with a serious prevailing disease without having submitted it to capable medical supervision. If this magazine aims to deal fairly with its army of readers, it should publish a statement correcting the error in de Kruif's announcement in order that the truth concerning this matter might receive the same publicity as was accorded the erroneous statement.

RESPONSIBILITY FOR MEDICAL MALPRACTICE SUITS

It is well known that every conscientious physician exercises his best judgment in treatment of every patient who receives his attention. He is not guilty of intentional or conscious malpractice. Since no man's judgment is always perfect, at times results may not be satisfactory, owing to many conditions in no way related to malpractice. It is notorious that certain individuals are constantly seeking to discover unfortunate conclusions of medical treatment for the purpose of inciting attack on the physician which in reality amounts to blackmail. Practically all state medical associations have established medical defense funds to protect their members from attacks of this character. Without this the practice of medicine would become a hazardous occupation.

Some of the state organizations have of late reported an excessive number of malpractice suits instituted against their members, some of which have had disastrous verdicts against the defendants. In analyzing these cases it has been declared that as many as ninety per cent of such suits have been based upon statements by other physicians, criticising the treatment of the defendants. This may be due to malicious intent or a careless and thoughtless suggestion. It seems incredible that a physician should intentionally promote such an outcome against a brother physician. Yet there comes to mind a case in which a medical witness for the plaintiff afterward shamelessly admitted that he contributed his testimony for the sum of fifty dollars. It is believed this is a rare example of medical degradation.

Although this subject has been presented many times to the medical profession, it cannot be emphasized too frequently or too forcibly that every doctor should have in mind the welfare of his fellow practitioners. If he is one disposed to careless criticism or suggestive advice, he should remember that he himself may sometime become the victim of a similar unfortunate experience. Practice of medicine is based on the purpose of relieving distress and helping the unfortunate. What a perversion of this altruistic purpose is displayed when a member of the profession violates the trust imposed upon him by bringing distress and affliction in this manner upon a fellow physician.

CANCELLATION OF A.M.A. MEETING

Cancellation of the annual meeting of American Medical Association has been announced for 1943. This meeting has been held continuously during the history of the Association except for sessions of 1861 and 1862 during the Civil War. Adequate explanations for this suspension of the meeting have been announced. Absence of a large number of physicians in war service, difficulties of transportation, demands upon the members remaining in home service and other reasons justify this cancellation. It is stated that there will be a meeting of the House of Delegates in Chicago next summer. This session, together with meetings of the Board of Trustees, can attend to the necessary business of the Association. While it is regretted that this greatest of annual medical meetings must be cancelled for the coming year, this necessity is obvious. All the energies of the medical profession must be extended toward winning the war, since our very existence and established civilization depend upon defeating enemies determined to subdue us and destroy what we consider essential for future existence.

COLONEL SAM F. SEELEY

The Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians has formally expressed its appreciation of the services rendered by Colonel Sam F. Seeley who has been transferred to military duty. Following is the text of the resolution adopted:

"The transfer of Lieutenant Colonel Sam F. Seeley from his connection with the Procurement and Assignment Service to active military duty causes a great loss. Colonel Seeley, who has acted as Executive Officer since the beginning of this Service, has been transferred to military duty, which is in keeping with the policy recently adopted by the War Department. His training and experience with the Medical Corps of the Army in his professional capacity amply justifies such a step.

"The Directing Board of the Procurement and Assignment Service wishes to take this opportunity of expressing to the Surgeon General of the United States Army its very deep appreciation for the valuable service which Colonel Seeley has rendered during its period of organization and functions.

"The Directing Board expresses to Colonel Seeley its deep appreciation for the great sacrifice which he has made in dislocating himself from actual military duty to serve with us in an executive capacity. He has been most unselfish, and has given unstintingly of his time, energy and patience in helping to solve many of the problems connected with the functioning of the Procurement and Assignment Service. He has not only labored faithfully at our office in Washington, but he has traveled over the United States, contacting many of his professional conferees and explaining to them the purpose for which the Procurement and Assignment Service was organized. His services have been most valuable and have helped to take us a long way in accomplishing the objectives for which it was created.

"The Directing Board expresses to Colonel Seeley its gratitude and thanks for his unselfish devotion to the organization of the Procurement and Assignment Service and wishes for him the greatest success in his new assignment."

Frank H. Lahey, M.D., Chairman
Harvey B. Stone, M.D.
Harold S. Diehl, M.D.
James E. Paullin, M.D.
C. Willard Camalier, D.D.S.

ORIGINAL ARTICLES

WHAT IS WRONG WITH THE AMERICAN DIET?*

A. J. Carlson, Ph.D.
Professor Emeritus of Physiology, University of Chicago
CHICAGO, ILL.

1. For the last ten years we have been told that one-third of the American people are ill fed, that these forty million American citizens suffer from malnutrition. Is this true? And if it is true, what are the reasons for it, and what can we do about it?

Dr. Carlson: One question at a time. Yes, we have been told. In fact, very recently we were told much more. At the National Conference on Nutrition for Defense, held in Washington, D. C., a year ago, Dr. Thomas Parran, chief of U. S. Public Health Service, said: "Studies of family diets by the Department of Agriculture in all income groups of the nation show that one-third of our people are getting food inadequate to maintain good health" and "less than one-fourth of us are getting a good diet." If this is true, that makes it, not 40 million, but about 100 million Americans with an inadequate diet, from any and all causes.

The question is, is this true? These alarming claims for national malnutrition appear to be based primarily upon a series of surveys conducted by the Bureau of Home Economics of our Federal Department of Agriculture, assisted in some of the field work and statistical analysis by the Department of Labor. These surveys embraced some 4,000 urban and village families of various levels of income and some 2,000 rural families of varying levels of income, selected from representative regions of our country. The surveys consisted of reports from these families as to how much money they spent for food, what kinds of food were bought and, in the case of rural families, how much and what kind of food they consumed from the crops on their own farms.

These field investigators (some of them on WPA) had to take or did take the people's word for all of these alleged facts. It is impossible to determine the degree of accuracy or honesty (accuracy as to memory) of whether members of these families gave the facts or alleged facts to the enumerators.

Nor do the surveys indicate the amount of foods actually eaten or the amount of food wasted. The latter factor is probably not inconsiderable, particularly in the families of the higher income groups. I know of no statistics on this point, but on the whole my experience indicates that the food waste at the table increases with the economic prosperity of the family.

On the basis of the kind and quality of the food bought or grown on the farms, the Bureau of Home Economics estimated the diets of these families as excellent, good, fair or poor. I wish to point out that no physical or medical examination was made of the members of these families. Not even such a simple physical fact as the determination of the body weights of the people involved seems to have been undertaken. I can only express my great regret that the value of these statistics must so largely be left up in the air as regards evidence for good or bad nutrition in our country by neglecting such an obvious factor as medical evidence of the health status of these people concerned.

Good medical examinations of members of around 6,000 families in our country does not seem a superhuman task. I feel certain that, if competent medical men in the U. S. Public Health Service, in the Bureau of Home Economics of the Department of Agriculture or in the Federal Department of Labor were not available, a suitable approach to national and state medical societies would have resulted in cooperation sufficient to carry out such a medical survey at little or no cost to the government. The surveys as conducted were made at considerable cost to our tax-paying citizens.

2. Is that the only evidence? Do our hospital records, our mortality statistics, our medical examination of our young men for the Army and the Navy point to a nation-wide malnutrition in America?

Dr. Carlson: Mortality statistics, even were they reliable, would only reveal extreme malnutrition. They would not tell us much about early stages of malnutrition. Between three and four thousand people are recorded as dying from pellagra (a disease due to an inadequate diet) each year. There is no recent rise in this category. Of course, there are many more people sick from pellagra than those who die from this disease. Advanced scurvy is now almost unknown in the United States. Beriberi is somewhat less rare, especially if we include those cases due primarily to chronic alcoholism and consequent failure to eat enough good food. Rickets is not a killing deficiency disease. We may have anemia from too little iron in the diet. But lack of iron is just one of the many causes of anemia.

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*Radio Interview with Dr. Carlson.

*Read before the Twentieth Annual Meeting of Pacific Northwest Medical Association, Portland, Ore., June 17-20, 1942.

So national mortality statistics fail to answer our question, but so far as they go, they do not point to a state of well nigh universal malnutrition in the United States. And the same is true of records of our hospital admissions. Of course, you may reply that doctors do not recognize early stages of malnutrition. If physicians don't, are WPA workers and Washington politicians any more competent in this field?

According to Col. Rowntree, M. C., U. S. Army, the first 800,000 Army draftees of 1941 examined were on the average 67½ inches tall, or of the same stature as our 1917-18 Army draftees, but our 1941 draftees averaged eight pounds heavier than those of World War I. According to General Hershey, rejections of draftees on account of underweight are so far about the same as those for obesity, or each around 4 per cent. So you see, even the story of our draftees does not point to a universal and demonstrable malnutrition. But I am not willing to go all the way in supreme optimism as does Mr. J. R. Hilderbrand (National Geographic Magazine, March, 1942), who asserts that our "machine food age—born of roads, research and refrigeration—has made the United States the best fed nation in history." We have the food to do it, had we the intelligence.

3. What happens to us when we do not eat enough good foods? Can we know, without asking a doctor, when we suffer from malnutrition? And if we ask the doctor can he tell us when and what?

Dr. Carlson: The simplest situation is this: Assuming absence of chronic diseases, if an adult does not eat sufficiently for energy needs, he soon loses weight; if a child does not eat enough for energy needs, he soon ceases to grow. Any layman can strip and step on the scales. The physical and mental impairments following prolonged inadequate intake of essential protein, essential fatty acids, essential inorganic salts and vitamins are more insidious. They cannot at present be diagnosed, even by the physician, unless they are well advanced, and by exclusion of many other factors that may produce similar symptoms, such general symptoms as decreased physical and mental endurance, decreased appetite, etc.

The anemias we encounter in the population are usually not due to too litle iron in the diet. Nervous disorders and decreased intelligence are very rarely due to vitamin deficiency. The signs and symptoms of such dietary deficiency diseases as scurvy, rickets, pellagra, beriberi, "war" edema (protein deficiency) any up-to-date doctor can detect and eliminate. But no one (doctor or layman) can be sure in regard to the early stages of these dietary deficiencies.

We have recently been told by a national committee of physicians, who should know, that one of the first signs of malnutrition is decreased appetite, and that laymen can diagnose their own states of nutrition by the state of their appetites for food. This is too good to be true. If it is true, and if it is also true that 100 million fellow citizens suffer from malnutrition, it is clear that the American appetite for food is sunk, and that it probably will take something more potent than synthetic vitamin pills to restore it to a level of national safety.

4. This sounds discouraging, if not alarming to us laymen. Must our national safety and wellbeing in the matter of nutrition be thus left in the fog, pending further medical and nutritional research?

Dr. Carlson: Not at all. America is a paradise in the matter of abundance and variety of all the foods requisite for an optimum human diet. And if we are average normal men and women, we still have our primitive urges of hunger and appetite, notwithstanding recent published assertions to the contrary. How do you suppose our ancestors carried on in the total absence of modern knowledge of food chemistry, vitamin requirements and the alleged necessity of "a pint of milk a day"? I do not think the Sioux Indians got much milk from the wild buffalo. The American Indian had neither cows nor goats. And yet he carried on. It is evident that for the greater part of human history man did very well nutritionally by eating enough of all available varieties of natural foods, guided by his hunger and appetite.

Nutritional safety lies in omnivorousness, in consuming, so far as possible, foods in their natural states, and, in the case of fruits and vegetables, eating some of them raw. Some of our malnutritions started with the processing, the refining, and the "purification" of such foods as the cereal grains, modern milling processes shunting the most valuable part of these natural foods into the mouths of chickens, cattle and hogs. The whole germ of the grains holds valuable proteins, vitamins and minerals. Human dietary safety on this front would seem to be to go back to first principles, *putting the whole grain into the flour and the bread.* This can be done. We can learn to like it. There is no more "purity" or nutritional virtue in white bread than in winter butter. I think we could learn to prevent the oxidative rancidity of whole grain flour. And until we have that problem licked, what is the matter with storing the wheat, and milling the flour as we need it?

I do not see any essential economic principle in storing the flour in place of storing the wheat. In my judgment, the recent addition of a little of the vitamins and minerals now milled out of the grain and singing peans of dietary salvation over this "enriched" flour and bread is not a sound policy either for today or tomorrow. Let us get back to first dietary principles on this front also. The whole wheat, rye or rice grain is one of our least expensive and protective foods. On the whole, we can trust nature as to the genuine nutritive elements in the whole grain; yes, trust nature further than the chemist and his synthetic vitamins.

Recently Prof. Drummond (*J.A.M.A.*, Mar. 7, 1942), the scientific advisor to the British Ministry of Food, voiced this reluctance to put the dietary safety of his nation on synthetic vitamins as a long range policy. He thinks we must and should provide the natural vitamins in the natural foods. I stand on that platform, until we know a great deal more than we know today about foods and human nutrition.

5. How vital are vitamins? How come that the horse and the hare, the wolf and the whale, the crow and the kangaroo seem to get on without them? What happens when our breakfast, lunch and supper do not adequately balance with all the known vitamins every day in the year?

Dr. Carlson: Not so fast, not so fast! The vitamins are vital. Even the kangaroo and the crow do not get on without them. They get all the vitamins required in their natural food. So did our ancestors. So could we. On an adequate abundance of natural foods we store vitamins in the body against weeks and months of vitamin scarcity. If we live mainly on such vitamin-deficient foods as white bread, polished rice, fat salt pork, refined sugars and hydrogenated vegetable oils, refined lard, etc., serious things happen to our health when our body stores of vitamins are depleted or nearly depleted. It should be obvious to all laymen that every meal every day does not need to be vitamin balanced. Our body stores take care of our urgent needs for weeks or months, unless we have already subsisted on the minimum for some time.

It is a fact that an adult man in average good health can go without any food whatever for at least forty days, without showing any recognizable vitamin deficiency. At the end of a forty days fast the man is considerably emaciated and more readily fatigued, but his appetite for good food is keener than ever.

There is today entirely too much blarney and ballyhoo about synthetic vitamin pills. Under any and all circumstances these pills are said to give us the abundant life, including intelligence, mental stamina and moral conduct! The tragedy here is this: *few if any of the people who can afford to buy these pills need them, few if any of those who need them can afford to buy them.* The consumer should insist that advertising of food conform to honest and factual education of adults in nutrition, for it is obvious that the consumer pays the freight of all food advertising in the increased cost of the advertised foods.

6. We are urged to drink milk, and to eat meats, eggs and vegetables for our needs of inorganic salts. Is that a good insurance? Is it enough? Can we get adequate mineral insurance at less cost through other diets?

Dr. Carlson: While it appears that herbivorous mammals have sought "salt licks" for countless ages, and our forbears fought wars for possession of sea salt as their more sophisticated descendants now do battle for crude rubber and mineral oil, it seems obvious that, except for the element iodine in restricted areas of the earth, the dietary needs of of minerals were efficiently met by the common, nonpurified, nonprocessed natural foods. So far as I know, this would still hold true, except for the cooking of such foods as meats, fruits and vegetables, and the habit of discarding the cooking water. To be sure, the otherwise excellent natural food, milk, is so deficient in iron that an exclusive or almost exclusive diet of milk for weeks or months brings on an anemia due to the iron deficiency.

How does the American dietary stand as to some of the essential mineral needs such as calcium, phosphorous, iron and iodine? The iodine deficiency in the states whose soil and water were depleted of iodine by the waters from ancient glaciers, is now taken care of by putting the iodine back into our table salt. The iodine was there before our ingenious chemists learned to take it out. Insofar as purification deteriorates our food, the science of chemistry does not serve man's welfare.

Prof. C. H. Sherman of Columbia University, an outstanding expert on nutrition, has long held the view that the American diet is probably too low in calcium, and possibly in phosphorus, for optimum nutrition. This problem is complicated by the fact that a modicum of vitamin D is involved in the adequate absorption and utilization of calcium and phosphorus, particularly in the growth and maintenance of our bones. *I wonder if the possibility of a dietary danger in this field could not be met, universally and without cost, by adding a little calcium, phosphorus and iron to our table salt.* This should offer no insurmountable difficulties, and there is no evidence that a slight excess above actual needs of these minerals works any injury to our health.

We are urged to eat milk for its calcium. Yes, milk is a good source for its calcium. Yes, milk is a good source for lime. But milk is a relatively expensive food, and even in our country with a plethora of foods there is not enough milk to go around, at least as long as we insist on butter and cream for our table and turn so much of the valuable skim milk into channels other than human food. I think we should put a little lime, phosphorus and possibly iron into our table salt as a national insurance towards good nutrition. But I wonder how many vitamin B pills we must consume before we nurture sufficient intelligence to take this apparently rational step.

7. It seems clear that we do not know the extent of malnutrition in our country. But some malnutrition, especially pellagra, obesity, underweight, anemia do prevail here. Why?

Dr. Carlson: The causes for the malnutrition that does prevail are both numerous and complex. Among these are: (1) chronic infections, (2) faulty dietary habits, (3) ignorance as to what makes up an adequate diet, (4) personal laziness, (5) poverty, (6) misleading food advertisements, (7) denaturing of such staple and standard foods as flour (wheat, corn) and bread, and too great consumption of purified sugars and candy, (8) waste of good foods, especially fats.

VITAMINS IN GENERAL PRACTICE

TREATMENT OF CERTAIN TYPES OF HEART DISEASE

Oliver J. Morehead, M.D.
RITZVILLE, WASH.

This paper will not include well known uses of the vitamins as, to mention a few, in alcoholism, debilitating disease, scurvy, rickets, dietary fads and vomiting of pregnancy. Discussion will deal chiefly with consideration of several relatively common conditions not usually thought of as resulting from dietary deficiency but in which I have found intensive vitamin treatment, particularly with thiamine hydrochloride, very useful. The ideas elaborated here are not strictly original with me but were gleaned directly or indirectly from the literature.

It is widely known that vitamin B_1 deficiency may cause a definite type of heart disease. That this may occur rather commonly in a comfortably prosperous American community on an apparently satisfactory diet or on a diet only mildly deficient seems not to be generally appreciated. Both children and adults are susceptible but in my experience children from four to sixteen years old are more prone to heart involvement from this cause.

The commonest complaint and sometimes the only one is tiredness. One boy was sent in by his teacher because she found him frequently sleeping in school. Intense precordial pain was the complaint of one little girl. An older girl in high school was subject to fainting several times a day. In addition to tiredness there may be loss of appetite. To these complaints may be added abdominal pain, nausea and vomiting.

Thoughtful consideration of past history may preclude focal infection and contagious disease such as scarlet fever as prime etiologic factors. The patient appears listless or nervous and worried. Temperature in very mild cases is normal but shows elevation somewhat in proportion to the severity of other signs and symptoms. The findings may be minimal such as a moderately rapid pulse and an accentuated apex beat. But the heart may be enlarged to or beyond the nipple line and the precordial pulsation may be violent, diffuse and very rapid. Actual cardiac insufficiency with its characteristic manifestations may be observed. In short, we have a patient with heart disease, a picture which very much resembles the cardiac phase of rheumatic fever. Only one of my patients, a young adult, showed characteristic multiple joint involvement. With one exception, that of a boy fourteen years old who simply showed no improvement, my cases have all recovered, some of them very promptly, under treatment with vitamin B_1 solution intravenously and the B complex and other vitamins as seemed indicated by mouth. So far there have been no recurrences.

Bed rest must be insisted upon, especially at first. One of my patients, however, a tall, undernourished, poorly disciplined boy thirteen years old with a greatly enlarged, rapid heart and a temperature of 100° to 101° refused to stay in bed. He preferred to go coasting frequently and delighted in staying in pool halls until midnight. This boy received twenty-five intravenous treatments of 20 mg. each for a period of thirty days, with the usual complement of vitamins by mouth. Despite his refractory conduct he was making excellent progress toward recovery. Then one day he disappeared. I found he had been taken by interested relatives to a prominent doctor who assured them there was nothing wrong with the youngster's heart and there never had been. For several months thereafter I occasionally saw the patient riding to school on a bicycle. Unfortunately for my statistics he is probably permanently lost from my observation.

I mention this case to illustrate the routine of treatment as far as medication is concerned. Incidentally we may infer that considerable activity is not incompatible with satisfactory recovery in rather severe, acute heart disease in children. Such activity is certainly not to be recommended.

A closely related condition is that of heart involvement as described, plus bronchitis or pulmonary congestion with more or less constant cough and profuse mucopurulent expectoration. This affection is encountered at all age levels but in my experience is more likely to overtake the older patient. The middle aged usually come with a history of "a cold that doesn't get well." Or they complain that the cold comes on with winter and tends to last till spring. The older patients say that the cough is worse in winter but hangs on all summer. Blood pressure in the older patient may be low, within normal limits or high.

This disease is probably the "winter cough of the aged" or, in severe form, "cardiac asthma." It is difficult to believe that the pulmonary congestion could always be due to left ventricular failure alone. Rather it would seem that abnormal stimulation of the parasympathetic nervous system might be thought of in partial explanation.

Treatment of both these states is the same, vitamin B_1 solution intravenously in daily doses of 20 mg. This or larger doses may be given more often in urgent cases. Since, as is well known, vitamin deficiencies are usually multiple, the other known vitamins are given in ample dosage by mouth. Treatment is continued thus until marked improvement is noted, then with diminishing frequency until recovery has ensued. It would seem reasonable to assume that, if the morbid processes due, presumably, to vitamin B_1 deficiency are not corrected with reasonable promptness, infection or other adverse secondary effect leading to irreversible organic changes may be superimposed upon the damaged, susceptible organism. In other words, in advanced cases complete cure can scarcely be expected.

Particularly in the treatment of children, the significance of the visible heart signs can be readily taught to the mothers. They often say they had observed this pulsation for some time but did not know that it was abnormal. The intelligent mother soon becomes quite expert in interpreting these external signs and, as the patient gradually improves, she follows the apex beat back to normal rate, position and intensity with great satisfaction.

As stated, many of these cases improve promptly. In others, particularly the aged, treatment must be persisted in for weeks, months or years. The patients, even children, soon come to appreciate the relief afforded by the treatments and are usually resigned to the slight discomfort of the needle puncture.

About a year ago I published in NORTHWEST MEDICINE an account of an elderly man whom I treated successfully with vitamin B_1 solution intravenously for cardiac (intrinsic) asthma and heart failure. About one hundred and sixty treatments were given over a period of six months. There has been no relapse and the patient is now, a year and a half later, back to full work.

An outstanding instance at the other age extreme is that of a seven and a half year old boy, an only child, who was brought to my office April 19, 1941. Salient details of the case history and the routine of treatment follows.

REPORT OF CASE

Case 1. J. K. was underweight and listless. A productive cough was almost continuous. Casual inspection of the chest showed a marked, diffuse precordial pulsation of 135 per minute with the apex beat well beyond the nipple line. The temperature by mouth was 101°. A very profuse mucopurulent nasal discharge, probably indicating sinus infection, necessitated mouth breathing.

The boy had not been well since he was three weeks old. The asthmatic condition, as the mother designated it, had persisted for years with gradually increasing severity. There had been an attack of pneumonia the previous fall. Medical advice had generally assumed that an allergic sensitization was at the bottom of the trouble and thorough skin testing had been recommended.

I began daily intravenous treatments of 20 mg. B_1 solution. B complex capsules and plain halibut liver oil were given by mouth. It is of interest to know that the boy was brought from his home twenty-five miles distant for his treatments. In three days he showed encouraging improvement. Two weeks later he awoke his mother in the night and asked for a sandwich. This was the first time in his life he had asked for anything to eat. As he became more comfortable he slept better and began gaining weight. By midsummer he was apparently well except for a slight hay fever. He had gained ten pounds and was eating with the harvest crew, demanding his share of pork chops and beef steak. During the four and a half months he had received fifty-five intravenous injections of vitamin B_1 solution.

Six weeks later, October 25, the patient was brought back apparently in complete relapse. Treatment daily with B_1 solution was started again and continued with decreasing frequency about six months, when recovery once more seemed complete. During the winter, because of the profuse nasal discharge, the patient was given small doses of sulfathiazole for several weeks. This proved very effective.

Recent examination (September 1) shows a slight tendency toward hay fever and asthma. The heart is normal. Occasional vitamin treatments are being continued. It is important to note that treatment was intensive and persistent, over one hundred treatments having been given. Excepting sulfathiazole nothing but vitamins was used.

A high school girl with similar but less severe involvement required eight treatments spread over two weeks. Eleven treatments spaced about three days apart sufficed for a young working girl. Two middle aged mothers received sixteen and eighteen treatments respectively, each over about a month's time before reasonable relief was afforded. Briefly, cases must be individualized. Diagnosis should be arrived at by thoughtful consideration of signs and symptoms rather than by weighing the odds for and against the probability of a deficient diet. Treatment is simple and, in my experience of over 11,000 intravenous injections of vitamin B_1 solution, harmless.

Various reports, favorable and otherwise, have appearing regarding the use of B_1 in herpes zoster. I have used this agent with inconclusive results in several instances. One case, however, deserves mention

Case 2. A primipara, age 22, in the sixth month of pregnancy came to the office on June 3 with mild symptoms of peripheral neuritis. On that day, also on June 5, 10 and 17 and eight times during July at regular intervals she received the usual intravenous dose of 20 mg. B_1 solution.

On August 3 she presented a typical but mild case of herpes zoster. Without hesitation I continued the vitamin treatments on August 3, 9, 11, 15 and 19. The disease ran a mild course. On September 2 a normal child was born with a normal delivery.

I doubt if another case has been reported of herpes zoster appearing in a patient who has been under intensive vitamin B_1 treatment for about two months (with the other vitamins by mouth as indicated during pregnancy) and with whom the same treatment was continued after the herpes appeared. This experience confirmed me in my impression that herpes zoster is not an indication of vitamin B_1 deficiency and the course of the disease is not affected by vitamin B_1 treatment except perhaps indirectly in certain cases known by other signs and symptoms to be deficient.

Niacin (nicotinic acid) is effectively used in chronically ill old people. Doses of 100 to 1000 mg. daily soon dispel the confabulations and the disturbing dreams. Certain types of bladder disturbance and loss of sphincter control of bladder or rectum are readily relieved by full doses of niacin along with B_1 by vein. An occasional case of delirium in small children is similarly benefited.

It is now known that obstinate dizziness not relieved by histamine frequently yields readily to doses of niacin large enough to produce the characteristic flushing reaction. One of my patients who had controlled his dizziness satisfactorily for two months with niacin was given the amide by the druggist, who was under the impression that it was superior to niacin because it did not cause the disagreeable flushing. The amide proved useless in his case. This might be expected.

The so-called hypertonic infant may well be treated with large doses of B_1 parenterally. Such a child frets and cries continually. The history and careful examination fail to reveal an adequate explanation for the evident discomfort. The child may have sore muscles and may cry out when pressed upon or handled. As can be readily determined by appropriate questioning, the mother will show symptoms of vitamin deficiency.

Treatment is simple. Since both mother and child are deficient I draw 25 mg. of B_1 solution into a syringe. Twenty mg. of this I give to the mother intravenously and the remainder I administer to the child in the buttocks. This may be repeated once or twice a day. If the child nurses, he may be omitted from the treatment after a few days. Improvement is rapid. If vitamin K is indicated, as in cases not having received proper prenatal care, the synthetic product may be mixed with the B_1 in the same syringe and given simultaneously. In this case mother and child are treated separately. A premature infant tolerates this treatment as well as a full term child and the indication may be even more urgent. Prophylaxis of the hypertonic infant naturally is adequate treatment of the expectant mother.

Another type of patient, with whom I have found B_1 useful, is a rather numerous class who date their disability, pain or discomfort from some more or less critical event such as an accident or an operation. One woman had pain in the back for years where a spinal anesthesia had been given. Another dated a constant shoulder pain from an accident years before. Two young men had pain in old appendectomy scars. These people are usually able to carry on in a fairly effective manner but are continually complaining. They tend to tire easily, are impatient and are likely to be constipated. They have a tendency toward insomnia. Questioning, particularly of the older ones, elicits a long history of paresthesias and other evidences of thiamin deficiency. These patients are very satisfactorily treated with B_1 solution intravenously.

This leads me to mention compensation neurosis. Doubtless there are designing individuals who, following an accident in industry, hatch deep plots for reaping compensation far beyond that deserved. Also there are some who honestly overestimate their disabilities. Moreover, actual disability may exist, due to disturbed anatomic and psychologic relations, of a nature not discernible to the physician but painful nevertheless. But it is certainly true that a considerable number of puzzling medicolegal cases are actual deficiency neuropathics, readily amenable to intensive B_1 treatment. No accident case should be branded as a compensation neurosis and no patient should be condemned as a neurotic until B_1 treatment has been vigorously pursued for a reasonable time.

I have an impression that, where B_1 is used intensively, the patient should be receiving his normal quota of carbohydrate. Also I feel that, when niacin is used in heavy dosage, B_1 should be adequately supplied. In fact, it is generally recognized that few if any vitamin deficiencies exist alone except, perhaps, in very mild degree. It naturally follows that, if one vitamin is needed in large doses, others may also be indicated, even though the symptoms are not evident according to present knowledge.

It may be asked how one arrives at a dose of 20 mg. being optimum. This is purely empirical. This dose once a day or in severe cases several times a day seemed to me to give best results. The question also frequently arises as to whether adequate vitamin intake cannot ordinarily be supplied by mouth. I believe anyone, who persistently uses B_1 solution intravenously in large numbers of cases where it is indicated, will soon be convinced that no other method of administration could give the striking results he has thereby secured. There is no question but that mild cases can be handled with vitamin preparations by mouth or even by a proper diet. Needless to say, the diet must be adjusted in all cases.

I have not mentioned differential diagnosis. In my experience most ailing people profit definitely from the use of vitamins, even though their chief pathology, as for instance in toxic goiter, is not due to lack of vitamins. In fact, vitamin deficiency is so common that I consider the burden of proof is distinctly to show that there is not a deficiency rather than that there is one. It is certainly as remiss to overlook other causes of sickness as it is to disregard the possibility of vitamin deficiency.

SUMMARY

1. A heart condition common in children and found in young adults in my community resembles the cardiac phase of rheumatic fever, These cases improve readily with vitamin B_1 solution intravenously.

2. B_1 solution intravenously with the other vitamins by mouth is very effective in chronic bronchitis with heart involvement at all age levels. This includes "cardiac asthma."

3. Herpes zoster is probably not a B_1 deficiency disease.

4. The condition of hypentonicity in young babies may be an evidence of a B_1 deficiency. B_1 parenterally in heavy doses controls the situation.

5. Compensation neurosis may be a vitamin B_1 deficiency.

INTESTINAL OBSTRUCTION*

HARVEY B. STONE, M.D.**
BALTIMORE, MARYLAND

This condition has caused considerable mortality for many years. Wheras most other surgical conditions within the abdomen have shown a steadily improving mortality over the last forty or fifty years, this has not been true of intestinal obstruction until comparativly recent times. Within the last five or six years in certain clinics there has been a noteworthy drop in the average death rate in all forms of intestinal obstruction. For many years it ran somewhere from 35 to 60 per cent mortality. In a few places it has fallen to under 10 per cent. My principal purpose at this time will be to bring out the reasons for this.

Intestinal obstruction as a general term includes two quite different conditions and the first point I wish to make clear is the difference between them. I hope to point out that they are different in their etiology, they can be distinguished from each other in differential diagnosis, and should be treated from a totally different point of view. Before going into the details of intestinal obstruction, I wish to refer briefly to the fact that the whole condition has been the subject of a great deal of investigative work by many men in many laboratories throughout the world. As a result, certain fundamental facts have been determined which have great clinical importance.

In brief, those facts may be summarized as follows: Under conditions of intestinal obstruction which persist for some time there is loss of water from the body so that dehydration is a physiologic change incident to it. Not only is water lost, but gastric secretions with their hydrochloric acid also are lost and alkalosis ensues. In addition to dehydration and alkalosis there is a fall in serum protein in the blood and it has been clearly demonstrated that increased pressure within the bowel itself is a factor of great importance in bringing about the pathologic development that comes with obstruction. Increased pressure from gas and fluid contents gradually rises until it equals and then exceeds blood pressure in the capillary bed, so that the capillaries in the bowel wall are collapsed, and as the pressure further increases within the lumen, the venules and arterioles are collapsed. As a consequence, the nutrition and viability of the bowel wall is impaired with danger of perforation, peritonitis and a fatal termination from that cause.

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**Associate Professor of Surgery, Johns Hopkins University School of Medicine.

Beside the mechanical disturbance in the bowel wall, there is probably also a physiologic alteration, so that failure to prevent absorption of toxic material comes about and it has been clearly shown there are accumulated within the lumen of the bowel highly toxic substances. Finally, these experimental studies have emphasized the very great importance of the time element. They have led to our realization of the importance of supplying fluids, correcting the loss of minerals, decompressing pressure within the bowel, the importance of prompt action and the fatal effect of delay.

The general topic of intestinal obstruction falls into two divisions. In one, failure of normal propulsion of intestinal contents is due to a lack of normal physiologic propulsive power; in the other, failure of progression of contents is due to an actual mechanical blockage of the lumen. In the first major group there are a number of subdivisions. In some rare cases the failure of propulsive power may be due to actual conditions in the bowel wall. In the rare condition in which angioneurotic edema involves the intestinal wall we have a form of obstruction due to edema and swelling and loss of muscular tone in the segment of the bowel. Another example is the condition in which the blood supply to a loop of bowel is destroyed by embolism of the mesentric vessels.

There are two other conditions, the reverse of each other, in which the failure apparently is a physiologic disorder. In one the bowel wall goes into spasm and we have what is known as spastic ileus, the best example of which is lead poisoning. The opposite of spastic ileus occurs when the bowel wall is paralysed. In paralytic ileus, the exact mechanism of which I think is not clearly understood, there is a loss of the proper interrelation between the sympathetic-parasympathetic innervation of the bowel so that segments suffer atonic loss and their contractile power is paralysed. This may result from many different clinical causes which may be completely unrelated to each other. It may occur in severe infections, in grave pneumonias, as a result of trauma to the central nervous system, following a brain operation or fracture of the spinal cord, as a consequence of operation on the urinary tract, after a prostatectomy or kidney operation. It is most important to recognize in paralytic ileus that the lumen of the bowel is patent, there is no mechanical blockage and failure of propulsion is physiologic. Paralytic ileus is not a surgical condition. The most that any surgical procedure could do would be to make a new opening into the gut. Trauma to the abdominal contents that accompanies every surgical operation is itself a cause of paralysis of the bowel so that a laparotomy superimposed on a paralytic ileus enhances the trouble which we are trying to correct.

What is the treatment if it is not surgical? The very fact that there are dozens or more treatments is the best evidence that none of them is completely satisfactory. Many drugs have been administered to try to stimulate and revive the peristaltic power of the gut. The best evidence that none is completely satisfactory is the fact that so many have been employed. In addition to use of drugs which it is hoped will act as stimulants, spinal anesthesia has been given with the idea of correcting the imbalance of the sympathetic relationship by taking off the inhibiting effect of one set of fibers. Sometimes it works very well; often its effect is only transitory.

Another method which has been employed is subjecting the patient to an atmosphere of high concentration of oxygen. That depends on a specific interchange of gases, the principle of which is that the gas causing distension in the intestinal tract is mostly nitrogen and by giving the patient pure oxygen there will be an abstraction of nitrogen from the bowel and decompression produced in that way. This has the disadvantage that it is very slow to work, and while I think it is certainly a sound theory and perhaps effective to a degree, it does not answer the clinical problem completely.

The most recent, and I think the most successful method, is designed to decompress the bowel by mechanical suction. You are all familiar with the Wangensteen method of siphon suction through a duodenal tube, and the more recent double lumen Miller-Abbott tube designed for that purpose. I think this tube comes closer to a satisfactory method of treating paralytic ileus than anything that has yet been suggested. I believe at the present time it is the method to use and depend upon the most. It is by no means easy to pass the tube and, in the hands of ordinary surgeons, house officers and internes, there are many cases in which it is not successfully passed. Another objection is that the passage process often takes a considerable number of hours, twelve to forty-eight or more before the tube travels down the intestinal tract, and that delay plays right into the factor of time loss that I mentioned before as being so important. Any or all of these methods are worthy of a trial, but they may fail in paralytic ileus.

The second great division of intestinal obstruction is that in which the lumen of the bowel is occluded. This may be due to strangulated hernia, bands of adhesions, volvulus, intussusception, gallstones, impacted bowel, tumor in the gut and many other causes. All have in common that the lumen is blocked. It is my firm belief that the primary, basic and essential treatment of mechanical obstruction is surgery and nothing else, performed as promptly as possible, although there are a number of important and useful accessory measures to be employed.

The differential diagnosis between these closely related and similar conditions is often difficult. They have many clinical features in common. Yet, it is possible in most instances to make a differential diagnosis between paralytic ileus and mechanical obstruction. Usually the history is different. Many cases of mechanical obstruction have something in their past story which gives a lead. They may have had a hernia for a long while, and you immediately think of the possibility of strangulated hernia. Many have abdominal scars from former operations and it brings to mind the likelihood that the trouble is due to adhesions or bands resulting in kinking or knuckling. The onset of acute mechanical obstruction is apt to be sharp and abrupt. The type of pain is colicky, intermittent, and accompanying it on auscultation of the abdomen one hears gurgling, squirting, bubbling or borborygmus. Often there is visible peristalsis. Vomiting is apt to come on fairly early and be pretty violent, sometimes projectile in character. Distension will depend upon the level of the obstruction. If the obstruction is high in the jejunum, there may be little or no distension. On the other hand, if it is in the colon, there may be very marked distension.

Paralytic ileus begins insidiously. There is a lack of colicky pain. Vomiting is slight. The patient may spit out a mouthful in contrast to the violent, projectile vomiting of mechanical obstruction. The distension is generally uniform. The abdomen is silent on auscultation.

Roentgen study is a tremendous help in recognition of an obstructive condition. Discovery of distended loops with fluid levels of the ladder pattern is confirmatory evidence of the clinical diagnosis. But I do not think roentgen study differentiates between paralytic ileus and acute, mechanical obstruction.

In clinical practice the individual case often does not fall clearly and sharply into any acceptable dogmatic picture and these two conditions are sometimes combined. With every case of acute, mechanical obstruction, whether due to bands, volvulus or other cause, if it is unrelieved, paralytic ileus supervenes as a late development. In other words, when mechanical ileus has persisted for a number of hours or days, because of its contents of fluid and gas, the bowel is overstretched and paralyzed.

Another condition may present to the most accomplished surgeon and the best internist extremely difficult problems for solution. Those are cases in the postoperative period within five or six days after an abdominal operation. The patient begins to show signs of obstruction and the question arises as to whether it is a paralysis of the bowel consequent upon either the operation itself or the condition for which it was done, or is it a mechanical kink due to a loop of bowel caught in plastic fibrin, adhesions or other cause? Those are the cases in which I have the greatest difficulty in making up my mind what to do. They make my dogmatic statement about never operating on paralytic ileus and always operating upon acute, mechanical obstruction much easier to say than to apply in practice. They are the only ones in which a period of necessary doubt and indecision has to supervene before one can make a decision just what to do.

During that waiting period the accessory measures that I referred to before should be employed. Supply intravenously adequate amounts of water to keep the patient in fluid balance as evidenced by his urinary output; add to the water sodium chloride to correct the mineral balance and the alkalosis; supply glucose for its nutritional value and to administer glycogen to the liver. Decompression of the bowel is obtained by a tube with suction. Whether this is a simple duodenal or a Miller-Abbott tube will depend upon the individual clinic and the facilities which it can utilize. The old standard accessory measures include stupes and heat to the lower bowel and things of general supporting nature. Again I wish to emphasize that the basic treatment of mechanical obstruction is operation as soon as possible and that these accessory measures should be used before, continued through and after the operation.

It has been asserted that it is safe and at times advisable to employ these accessory measures and wait in the hope that they will relieve a mechanical obstruction. The statement has been made by important surgeons that they can recognize the difference between a mechanical obstruction which does not impair the circulation of the bowel and one which does. They speak of prompt operation in the case of strangulating and deferred operation in case of nonstrangulating obstruction. I disagree thoroughly with that point of view. I can not tell what is happening to a bowel inside the abdomen by the clinical evidences that you recognize. I do not know whether a piece of gut is strangulated or not, and I must assume that it may be. I know that, whether it is strangulated now or not, if it is not relieved within a reasonable length of time, the whole gut is going to be embarrassed by intraluminal pressure.

Many things might be said about what to do when operating for mechanical obstruction. Certain general statements may be made. What to do depends in the first instance upon the condition of the bowel as you find it when exploring the abdomen; whether it has been damaged so much that it is not viable. Whether to remove a piece which has gone past the recovery stage is the first issue to settle.

There are certain observations that a surgeon makes to discover whether the damage is irreparable or recoverable. After relieving the obstructing band, volvulus or strangulation, watch the gut to observe its color, test the contractility by tapping or pinching it. If persuaded on the basis of these observations that the gut will recover, drop back the viable gut and close the abdominal wall. If it is hopelessly damaged, there can be no question that the gut has to be removed. Considering the borderline case, where obviously grave damage has been done but it is not hopeless, pack the gut in hot cloths and see if it improves or put it back in the abdomen and withdraw it after five or ten minutes and see whether the circulation has been restored.

In addition to the question of local damage to the bowel, the patient's general condition plays an important part in the decision as to what kind of an operation should be done. With the gravely ill patient it would be bad judgment to undertake a long resection and additional anastomosis. Other factors enter into every surgical decision, as the surgeon's own experience, judgment and familiarity with certain types of surgical procedure. What to do will be a composite of all of those various factors and it must rest on the surgeon's own sense of judgment and responsibility.

As a result of greatly improved accessory methods of treatment which have developed from experimental study and as a result of the conviction that with mechanical obstruction early recognition and prompt operation is the course to follow, there has been a notable reduction in mortality following this type of obstruction. I believe that, when a patient presents himself with acute, intermittent, colicky abdominal pain, and for a considerable period there has been failure to pass gas or stool per rectum, and there is violent vomiting, audible peristalsis, roentgen evidence of obstruction, the proper thing is to operate as soon as it can be done. There is no good surgical reason for operating on a patient with paralytic ileus. The crux of the whole situation is to be able to make a differential diagnosis between these two closely similar conditions which require diametrically opposite surgical methods of handling.

WAR WOUNDS AT THE SURGICAL STATION

R. de Rohan Barondes, M.D.
LOS ANGELES, CALIF.

In the treatment of wounds and fractures of the extremities at the Front, all that one may hope to accomplish in the way of preliminary treatment is control of bleeding by tourniquet or compressive bandages, superficial cleansing of wounds and immobilization of the limb with well-padded splints. Further treatment must be rendered either at the surgical station or the base hospital for the more important surgical attentions.

There are several opposing methods of treating such wounds, and all with their advocates. The major differences of opinion, however, arise in the use, nonuse or incomplete use of sutures; and the use of sulfonamides in the wounds either before suturing or their use only topically subsequent to closure. Some even ignore the use of either or both entirely.

Ponseti and Guri,[1] with their vast experience in treating wounds during the late Spanish War, found that all chemical agents were useless and even harmful to injured tissues. They thought it better not to molest with chemical substances the biologic process of defense and healing which is very active in soldiers who are usually young individuals. In the Spanish War, the surgical teams were ordinarily not stationary but traveled in hospital trains and motor trailers, and, when possible, operated in hospitals. This was done with two objects in view: first, they were enabled to go where the requirements of battle demanded; and, second, they could go as near to the Front as circumstances permitted without endangering the loss of surgical equipment. Two teams worked together, one team of abdominal surgeons, the other of orthopedic surgeons.

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[1] Ponseti, I. and Guri, J. P.: General Principles in Treatment of Wounds and fractures in Spanish War. Mil. Surgeon, 1:39-48, July, 1942.

The first thing done in the surgical station was classification of the wounds: those with abdominal wounds, those with wounded extremities, and those wounded in the head and thorax. Head wounds were carefully cleansed, necrotic brain tissue was resected, the dura left open, and final closure effected by suturing the skin. Thorax wounds were treated simply by resecting the necrotic edges, adhesive bandaging around the thorax, and immobilization of the patient who was given morphine and cardiac stimulants. The orthopedic teams had suitable fracture tables or portable traction apparatus, portable roentgen equipment, wire splints, refrigerated glass tubes of universal blood and necessary surgical instruments.

Ponseti and Guri discarded absolutely the primary suture of wounds after a supposed surgical cleansing, as this earlier technic was in their opinion the cause of a great number of failures and serious infections in the earlier part of the war. War wounds are usually impregnated with foreign material and innumerable organisms. For this reason, and in spite of the most careful and thorough cleansing, these wounds were never sutured. Others, experienced in treating these types of wounds, also recommend immobilization of the extremity in a plaster cast after adequate surgical removal of all traumatized tissues which are already physiologically lost, and obtaining as much drainage as possible of the traumatized area.

Spanish surgeons lay special stress on the treatment of bone fragments, removing only those bone pieces which are loose and situated away from the fracture focus. Earlier surgeons had removed great quantities of bone pieces, hoping to avoid osteomyelitis, but the results were with few exceptions a pseudoarthrosis because of the loss of bone substance. They considered osteomyelitis in war is much less important than pseudoarthrosis.

Bick,[2] an Army surgeon, treated fifty traumatic and operative wounds by thorough washing and trimming, irrigating them with normal saline, suturing and dressing them with dry dressings. He applied 1.5 to 10 mg. of powdered sulfanilamide or sulfathiazole, sufficient to cover all surfaces of the wound but avoiding massive packs of the powder. Fifty other wounds were treated in similar fashion but without the use of the sulfonamides. In the sulfonamide group there was only one infection, compared with four in the control group. In wounds in which sulfonamide powder was implanted, a definite retardation in healing was noted, and more fluid discharge observed from the wounds. The scars in the control group appeared somewhat smaller and finer than those of the sulfonamide series. The drugs, when applied to the exposed joint or tendon surfaces, in twenty-seven cases, gave no unfavorable reactions in the joint or tendon sheath.

Moorhead, Strode and Halford,[3] under the best but most tragic of conditions, formulated the following rules for the care of such war wounded:

1. All patients should be properly prepared with fluids, plasma or blood transfusions before they come to the operating rooms.

2. Surgeons should be teamed, one team for surgery, another for thoracic surgery and so on.

Surgeons should work with assistants accustomed to their methods.

Whole blood was found to be the best method for combating shock or hemorrhage. Plasma was next best. In burns, however, plasma was preferred. Saline, with or without 5 per cent glucose, was also given. Patients should be treated for shock before reaching the operating table in order to prevent unnecessary delay, except for control of hemorrhage or some other dire emergency.

All accidental wounds were cleansed with soap and running water. When a foreign body was obvious and easily removed, it was done. Devitalized tissue was excised until there was normal color, the wound bled, or until a muscle contracted. Then the tiny frayed edges around the wound were plucked. The entire wound was covered with sulfanilamide or sulfathiazole powder. These drugs were useless when wounds were not properly prepared. The wounds were not sutured completely until the end of the third day when, barring evidence of infection, the stitches were drawn together. Dressings were massive. Outer layers were not necessarily sterile.

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[2] Bick, E. M.: Observations on Topical Use of Sulfonamide Derivatives. J. A. M. A., 118:511-518, Feb. 14, 1942.

[3] Moorhead, J. J.: Principles of Traumatic Surgery. Hawaii M. J., 1:141-151, Jan., 1942.

In the cases treated, only eleven developed gas gangrene, all occurring where primary suture of the wound was performed. When gangrene was encountered, the wound was excised immediately and ruthlessly because, if the spot is not cleared within twelve hours, amputation may be the only hope. No therapeutic injection of gas-gangrene antitoxin was used because the specificity of commercial antisera for local gas-forming anaerobes was doubtful.

The cases were dressed twice daily, at which times generous amounts of sulfanilamide were dusted into the wounds. The drug was used orally also. Transfusions of 500 cc. whole blood was given almost daily. Roentgen therapy was employed, although its status is controversial. No cases of tetanus were observed among the patients with gas grangrene, probably because they previously had received prophylactic injections of tetanus toxoid and stimulating injections on arrival.

The cases of Moorhead were usually compound fractures, frequently associated with imbedded foreign bodies. Following debridement, the interior of the wound was coated with the sulfanilamide, and the patients given 15 grains of the drug orally. If tolerated, 15 additional grains of sulfathiazole were given intravenously. Plaster bridges over the region of injury facilitated the dressing of the wound, using gauze moistened in sterile oil or vaseline. According to Key and Lembeck,[4] it is important to place the sulfanilamide in the deeper recesses of the wound and in the marrow canal, when reducing traumatic fractures.

Quesada[5] advocated complete reduction of a fracture, based upon exact anatomic restitution of the fractured bones, medullary canal, solid bone opposite solid bone and periosteum in contact with periosteum. The usual peacetime surgical methods were discarded; such as use of metal plates and penetrating traction. While feasible in ordinary hospital procedures, these methods have several drawbacks for wartime surgery. For example, slow and uncontrolled penetrating traction is difficult to maintain in wounded who may have to be moved; penetrating traction requires a large and varied supply of materials which may be difficult to obtain under war conditions.

Quesada obtains complete and perfect reduction with the use of only simple surgical instruments and plaster casts. Overlapping is corrected by angulation or rotation, usually under local anesthesia with novocain, making traction by external manipulation. The ends of the bones are secured at the same level, and a plaster cast is applied to maintain the correction of position. This is checked with roentgenograms, and the center of the fracture is then marked on the overlying plaster. With this mark as a guide, a window sufficiently large is cut out to permit surgical intervention and secondary operation.

The operating field is sterilized by tincture of iodine, as is the frame of the cast. Four layers of sterile gauze are placed around the edges of the window. Local anesthesia is administered in each plane. A second application of iodine is made over the incision line, and drapes are clipped to the edges. Muscle aponeuroses are incised and muscles separated until the bone is reached where the periosteum is then separated. Exposed ends of the fractured elements are obtained, using Farabeuf bone forceps. Fractured ends are juxtaposed by very careful suturing of the periosteum. Aponeuroses and skin are then closed, and a second roentgenogram demonstrates the final result. Quesada's method has also been applied to bone grafts in resections of subperiosteum diaphysis and in the treatment of extensive osteomyelitis of children.

Before applying a plaster cast, I always place a sterile pad of suitable size and thickness over the area of injury, especially if it be a compound fracture, or if the wound is draining to any extent. This will prevent secretions from working up under the cast, and facilitates cutting the window without undue injury to the already injured parts beneath. This pad is then removed and four sterile medicated pads are inserted beneath the slightly raised edges of the window, the exposed portions being folded back over the plaster. The skin should be again sterilized, and the drapes attached ready for commencement of the operative procedures.* The window should be a little larger than the surgical area, as this relieves undue pressure by the window edges which may aggravate posttraumatic edema that sometimes occurs. The powder, rough plaster edges of the window should be covered either with adhesive strips or painted with thick iodized collodion.[6]

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[4] Key, J. A. and Lembeck, J. A.: Local Use of Sulfanilamide in Compound Fractures and Other Wounds. Indust. Med., 9:493-497, Oct., 1940.

[5] Quesada, F.: Quesada's Method for Treatment of Fractures in Total Warfare. Mil. Surgeon, 1:17-21, July, 1942.

*If the neoprontosil-medicated material is not available, one may readily prepare such treated gauze, packing material, etc. by immersion in solutions of 5 to 15 per cent neoprontosil until thoroughly impregnated, when they are then compressed of the azosulfamide dye, and stored ready for use. As the sulfonamides are not self-sterilizing, such prepared material should be autoclaved at 15-lb. pressure for thirty minutes. Hot packs soaked in neoprontosil solution could also be used in the local treatment of burns as a prophylactic measure against infection.

[6] Barondes, R. deR.: Antibacterial and Healing Factors in the Closed Plaster Treatment of Wounds. Med. Record, 155:373-374, July 1942; The Sulfoamides; New Prontosil-Medicated Gauze in Treatment of War Injuries (In Press); Azosulfamide Intraperitoneally in Treatment of Suppurative Appendicitis, Peritonitis, etc. Clin. Med., August, 1940.

After completion of operation, the area is cleansed and sterilized with mild tincture of iodine, or merthiolate, and the medicated sterile dressings applied.[6] The loose spaces below the window edges may be lightly packed with sterile absorbent cotton and sealed over with thick applications of the iodized collodion which then prevents secretions and medication from spreading to adjacent areas.

Pooling of such valued information, obtained through study and observation of the various methods instituted in treatment of the war wounded, should enable others to further improve upon these methods, and hasten the restoration of these casualties to health and usefulness.

GUNSHOT WOUNDS OF THE LIVER*

Clyde W. Countryman, M.D.
SPOKANE, WASH.

Gunshot wounds of the liver are usually thought of as war injuries. As the liver is one of the most important of vital organs, all of its injuries are serious and a large percentage fatal. In the routine of civilian surgical practice, gunshot wounds of this organ were always rare outside of the large cities. Within the past two decades the lack of respect for human life and the advent of wholesale murder associated with robbery and racketeering have caused a rapid increase in this type of injury. Use of high powered pistols and the Thompson submachine guns by American criminals has made this type of injury more common than ever before.

The earliest modern description of the patient with gunshot wounds of the liver is given by Guthrie, Associate Surgeon General of the British Medical Corps, in his commentaries of the British wars from 1808 to the Crimea in 1854. He states:

> "Wounds and injuries of the liver, whether incised or penetrating, occurring from blows or from musket-balls, are very serious, although not necessarily fatal. Some few persons recover altogether, some few with more or less of permanent disability. The remainder die during the first or inflammatory stage, or in the secondary one which follows from the twelfth or fourteenth day after the primary symptoms have in some measure subsided.
>
> "The symptoms which ensue after a wound of the liver are those common to inflammation of the cavity of the abdomen, with the addition of those peculiar to the organ; pulse often smaller and less perceptible than in peritonitis; discoloration of the skin, eyes and urine, amounting even to jaundice, although this is not an immediate symptom, neither is it always present. The pain is not confined to the part, but extends to the umbilicus, while the pain symptomatic of inflammation of the liver, viz., pain in the top of the right shoulder, is felt early, and is often accompanied by cramps of the muscles of the arms and numbness of the fingers. The usual symptoms of anxiety and depression are present, and the stomach shows by its irritability that it has partaken of the shock given to the system. The bowels are usually confined, but I have known blood passed from them when it was not supposed that the stomach or intestines has been wounded; the discharge from the wound is either of blood or bile, or both, mixed with a serous effusion which afterward becomes purulent."

The types of gunshot wounds of the liver are three: first, puncture, simple perforative type; second, associated rupture of varying degree; and third, fissures and imbedded foreign bodies such as the missle or other foreign substances carried in by it.

The injury varies with the type of projectile used, the soft-nosed or the lead bullet causing more destruction than the steel or alloy jacketed one. The thing to be remembered is that the foreign material carried in with the bullet is usually found in the wound and an important cause of infection and secondary delayed hemorrhage. There can be no question as to the immediate necessity for operation, as the damage done to the parts is necessarily of such a character as to demand inspection. Other viscera may also be injured. Foreign bodies may be within the wound, bleeding may still persist and contamination be present. Free opening and adequate cleansing must be performed at once.

The signs and symptoms of gunshot wounds of the liver are the opening of the bullet hole over or adjacent to the liver, shock, hemorrhage, pain, localized tenderness, rare drainage of bile from the wound, perhaps air hunger and thirst, whether there is serious hemorrhage or not. Pulse elevation is the rule, although later it may be slow; nausea is always present, vomiting usually. The pain varies. Local tenderness is the most pathognomonic sign. Pain in the upper right shoulder may be significant.

Preoperative transfusion can be resorted to when fair assurance is that the hemorrhage has ceased or is controlled.

All cases should be operated upon as soon as possible after the injury. If there is a question of penetration of the peritoneal cavity, laparotomy is indicated. If the peritoneum is intact, little or no damage is done as the mortality rate in simple exploration is very low.

Nitrous oxide and oxygen is the anesthetic of choice. Shorten the anesthesia as much as possible. Davis reports a higher mortality rate with spinal than with gas anesthesia. When opening the abdomen, seek the source of the hemorrhage first and control it; use careful traction, muscle tissue packing; drain adequately and close the abdomen as quickly as possible to shorten the amount of shock. The quickest, easiest, most logical method of repair should be used.

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*Read before Surgical Staff Meeting, Air Base Hospital, Fort George Wright, Wash., Aug., 1942.

Fifteen to 20 per cent of abdominal wounds are those in the liver. Approximately three-fourths of all liver injuries are uncomplicated. When associated with other organs, they are most frequently seen in the stomach, kidney and colon. Liver wounds are usually torn or jagged and not clean-cut. Wounds of the gallbladder and gallducts are very rare.

Nonintervention is the safest course in shotgun wounds of the abdomen and liver. Here, according to Willis, expectant treatment is to be emphasized.

McCowan reports 80 per cent of deaths due to secondary hemorrhage, 12 per cent to infection, 2 per cent to abscess, 4 per cent to pneumonia. There is a definite lessened time elapsing between the injuries and surgical repair in the surviving and in the fatal ones. In the suriviving cases there is marked shock in about 23 per cent, in the fatal 82 per cent.

Other lesions are missed in 10 per cent of the cases. A careful check will often find other injury and the incision should be adequate to properly explore all possible injuries to other organs. A successful liver suture with an overlooked intestinal perforation is not conducive to recovery. Billings and Walking report nine overlooked adjacent injuries in their series of forty-nine cases. My explanation of such oversight is that in some of the large cities with large services many times the resident or senior surgical interne is the one who performs the emergency operation. His qualifications and training are not such that he takes the extreme care and caution, nor has he the trained power of observation always to determine the extent of the possible secondary injuries.

Immediately after admission to the hospital, treatment for shock should be instituted. Intravenous serum, plasma and transfusions, external heat and morphine, blood typing and matching should be done and the blood pressure followed carefully. Roentgenograms may be made on the table with the minimum of handling and are frequently invaluable in indicating the not infrequently deviated course of the bullet and demonstrating the presence of air in the abdomen showing other visceral injury.

Penetrating wounds of the abdomen remain one of the most difficult problems in surgery of the acute abdomen. Those penetrating wounds inflicted with a knife are less dangerous than when produced by a bullet. Attention must be called to the importance of adequate exposure obtained with long incision, and at times evisceration for adequate exploration of the area injured. The gravity of retroperitoneal injury demands a wide exposure and extensive drainage.

The major consideration is speed. In those operated upon within the hour following injury the chances of recovery are good. Every hour after that the mortality rate rises rapidly. These patients present the foremost surgical emergencies and must be respected as such, if we desire to improve the excessive present day mortality; furthermore, procrastination must be absent from our surgical procedure. Complications of this type of injury are most frequently hemorrhage, either early or delayed, fistula, abscess, nephritis, pulmonary complications, general peritonitis and septicemia.

In the event the bullet has penetrated the liver, the operative procedure is simply to control subsequent hemorrhage developing from the laceration. Tamponade with gauze pack has always been considered sufficient to control the hemorrhage. It does to a large extent, but very often secondary hemorrhage occurs while the packing is being removed or after removal, and a satisfactorily performed operative case is lost.

The method most suitable and one which I have successfully used in eight cases is the tamponade of the liver wound with portions of the rectus muscle from the incision. In six surviving cases of the eight the results were excellent. These were uncomplicated liver gunshot wounds and responded to this method. In the two terminating fatally the cause of death was pulmonary embolism. Autopsy showed rapid healing in the liver, repair without liquefaction of the transplant and apparent regeneration in some of the muscle fibers.

For many years we have known that hemorrhage in a surgically incised muscle is very infrequent. There is also the liberation from this muscle tissue of thromboplastic substance that may fill more than the simple function of pressure and tamponade in formation of a clot and thus promote earlier healing in the injured tissues. This is theoretical, I know, but seems sound reasoning. I have been assured by physiologists that, due to recent work on skeletal muscle regeneration and the large amount of available contingent circulation in the liver tissue, this may take the part of an autogenous transplant itself and be the most plausible and least dangerous of all types of tamponade in liver injuries. This method is simple, rapid, leaves a mini-

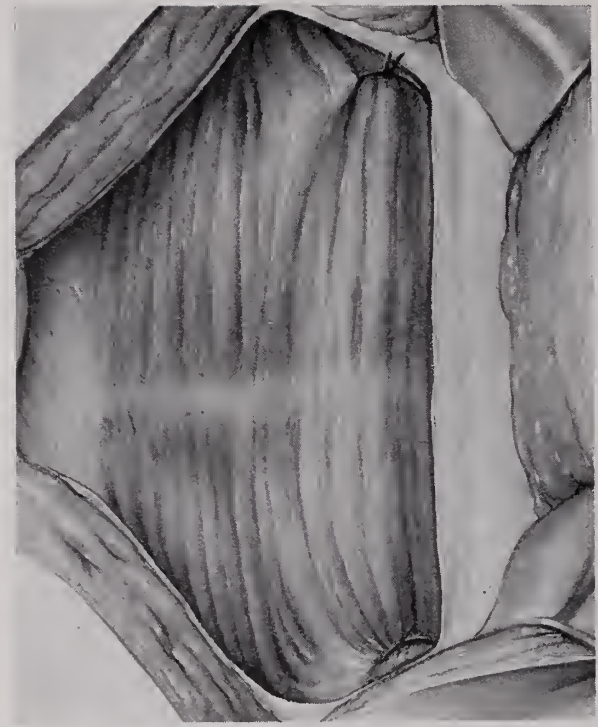

Fig. 1. Shows ligatures in muscle for stripping out segment.

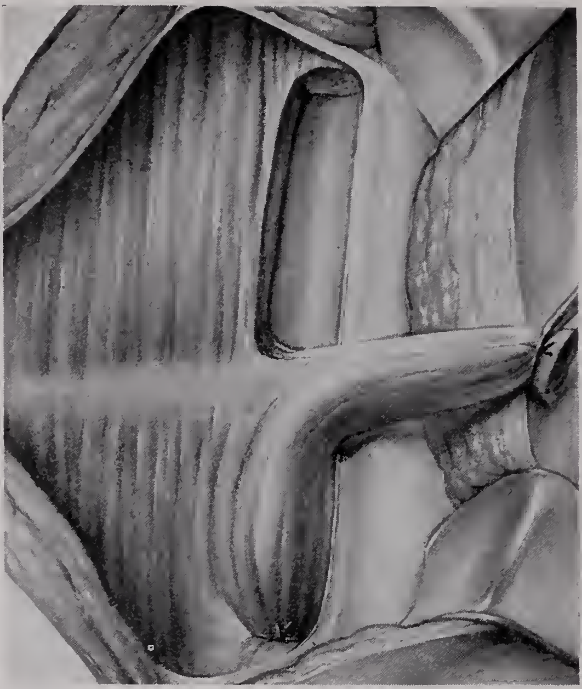

Fig. 2. Shows segment being removed.

mum of foreign tissue and eliminates the necessity of removal of packing with the danger of the secondary hemorrhage so frequently seen.

The method of obtaining the muscle is as follows: the inner border of the right rectus muscle is taken because it is easily obtained and the circulation and ennervation of the balance of the muscle are not disturbed. Also, the danger of post operative hernia will not be encountered unless other disturbing elements, such as infection in the incision, occurs. A ligature is placed around the upper end of the inner border of the muscle, around as much of the muscle as is needed and tied (fig. 1). It is then freed from its attachment and stripped downward with the scalpel handle to desired length (fig. 2), where another suture is placed and tied. The transplant is then removed with the scissors and with either a uterine dressing forcep or a fourteen inch suture carrier is placed into the bullet hole and the lacerated liver (fig. 3).

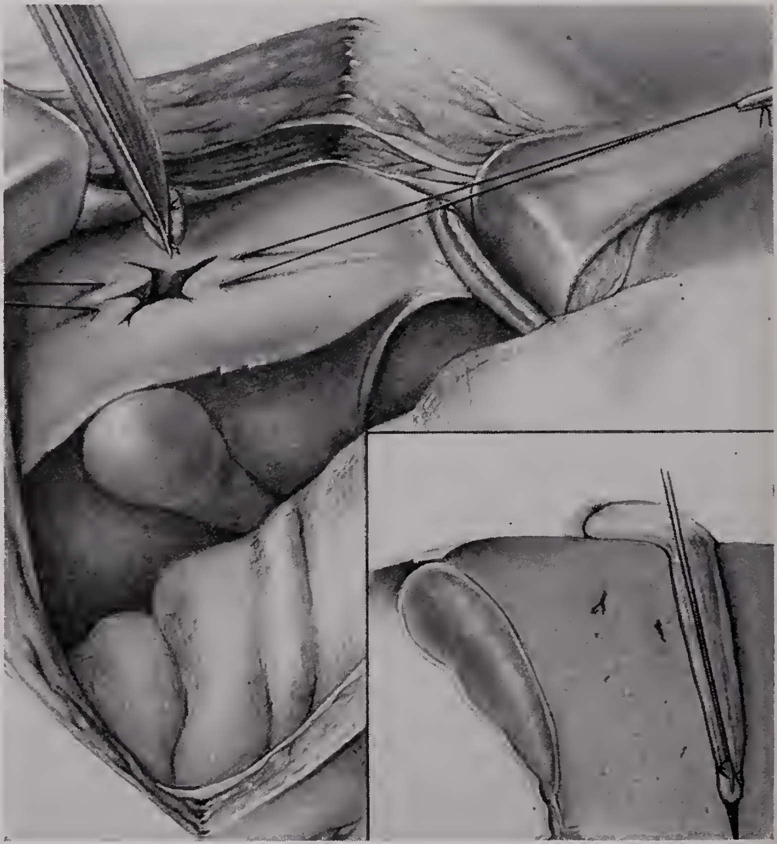

Fig. 3. Stay sutures holding open the wound and muscle strip being inserted.

One or more reverse figure-of-eight mattress sutures are placed with enough pressure to approximate the liver wound (fig. 4).

CASE REPORT

White male, aged 39, policeman, admitted to hospital by ambulance following gun fight with hold-up in dark alley, complaining of pain in lower right chest and upper right abdomen. Pulse 125, skin greyish and damp with perspiration, moderate air hunger, pain in apex of right lung, nausea and attempts at vomiting.

Temperature was 97°, respirations 34. Physical examination showed a patient in shock, cold damp skin, rapid respiration, rapid pulse, pallor marked, mild cyanosis of lips and finger tips. There was present over the 9th rib in midclavicular line a bullet hole about one centimeter in diameter, round and exuding a small amount of blood. The wound of exit was at the level of the tenth rib in the right midscapular line and was about 2.5 cm. in diameter. The bleeding was more marked, with evident small pieces of shattered bone in the wound. There was marked right upper abdominal rigidity and tenderness on pressure. Patient was conscious and cooperative.

Five hundred cc. of serum was given and 1,000 cc. of 5 per cent glucose in saline ordered to follow. Four cc. of coramine was given intramuscularly, patient placed in Trendelenburg position.

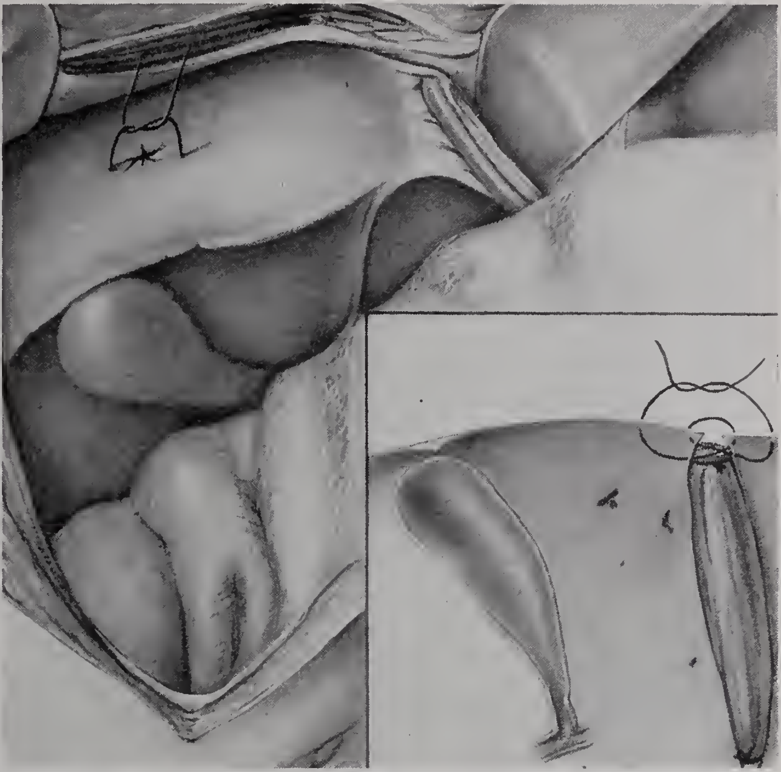

Fig. 4. Muscle strip in place. Small illustration shows reverse figure-of-eight.

Operation. Upper right midrectus incision, muscle retracted from bed, subfascia incised and peritoneum opened. There was a large amount of blood in the abdomen. On exploring the liver, a punctured wound was found under wound of entry about 2 cm. in diameter with several stellate tears running out 1 to 2 cm. away from edge of opening in liver and bleeding profusely. The wound of exit was examined. There was apparently no bleeding here as the posterior border was fixed. This area was not disturbed.

A piece of the rectus muscle 2 cm. in width and 12 cm. in length was removed and placed in the liver lacerations as described and shown in the accompanying illustrations. Stay sutures were tied, two penrose drains left in abdomen and the incision closed. Subsequently three 500 cc. blood transfusions were given (one each day). The drains were removed on the eighth day. Recovery was uneventful.

SUMMARY

To me, the fundamental principles in the treatment of gunshot wounds of the liver are: rapid and immediate surgery with a minimum of wasted time, control of hemorrhage, muscle transplant tamponade of the liver injury, search for additional injuries to other viscera, efficient debridement of the wound of entrance to prevent slough and infection, treatment of shock, rest with adequate doses of morphine, administration of sulfanamides and tetanus toxoid, careful supportive treatment postoperatively with repeated urinalysis, transfusions, icterus index, leukocyte counts, temporary drainage to control the infection which is always present. Remember that secondary hemorrhage and sepsis are the most frequent causes of death. Reinfusion of blood may be permissible, if there are no complicating injuries. I should rather transfuse repeatedly.

I believe it can be hoped that progressive surgical practice may permit rapid efficient handling of this serious, acute abdominal emergency. If in supplying an easily obtained transplant, obviating the necessity of removal of gauze packing we gain a small percentage of lives, it is worthwhile.

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CENTER FOR STUDY OF INFANTILE PARALYSIS

Annoncement of a five-year, $300,000 grant to the Johns Hopkins University, Baltimore, for an intensive and long-time study of the disease of infantile paralysis was made today by Basil O'Connor, president of the National Foundation for Infantile Paralysis.

This is the largest single grant made by the National Foundation since it was organized in 1938. It will be used to establish and conduct the Center for the Study of Infantile Paralysis and Related Viruses at the Hopkins. The funds which make this and other research projects of the National Foundation possible are contributed each year at the time of the national celebration of the President's birthday.

In announcing the grant, Mr. O'Connor said: "The establishment of this Centetr at Johns Hopkins is the product of the ideas of many investigators who, after years of research experience in the field of infantile paralysis, keenly felt the need for a Center in which the talents of numerous scientists with widely diverse backgrounds could be pooled in a concentrated attack upon the problems of the disease. In addition to the separate research work of individuals now supported by the National Foundation in leading institutions throughout the country, there has been a need for units in which all the problems of poliomyelitis could be studied on a comprehensive scale and on a long-time basis. The Johns Hopkins University offers an ideal place for such a Center, as a large number of the required staff of epidemiologists, virologists, serologists, neurologists and chemists acquainted with the problems presented by poliomyelitis are available there.

"In view of war conditions it is highly desirable, if it can be accomplished without sacrificing defense interests, to keep a nucleus of scientists at work on the problems of infantile paralysis which are so important to human welfare, with the hope that, when peace is established, contemplated expansion in this field may be rapidly consummated."

Work at the Center will be under the direction of Dr. Kenneth F. Maxcy, professor of epidemiology in the School of Hygiene and Public Health. Dr. Maxcy will be assisted by a competent group of scientists, some of whom already have made significant contributions to research in this field.

Three members of this staff already have been appointed and have begun their work, according to Dr. Maxcy. They are Dr. Howard A. Howe and Dr. David Bodian, formerly of the Department of Anatomy in the Johns Hopkins School of Medicine, and Dr. Robert C. Mellors ,a young biochemist from Western Reserve University.

These two investigators have conducted a large number of experimental studies on poliomyelitis as members of the staff of the Department of Anatomy. Their studies recently were collected in book form under the title, "Neural Mechanisms in Poliomyelitis." The investigations reflected in this publication deal mainly with the manner in which the causative virus gains entrance to the body, travels along nerve pathways in the brain and spinal cord, destroying certain kinds of nerve cells while leaving others unscathed. This kind of knowledge is fundamental to an understanding of how to prevent the paralysis that follows so frequently. The newly announced grant from the National Foundation for Infantile Paralysis will permit considerable expansion of work in this field. Other appointments will be made to augment the staff of three already at work.

In setting up the Center, adequate laboratory space and facilities have been provided and resources of the new grant will permit the investigators to carry on their studies in the field as well as in the laboratory as opportunity may be presented. The ultimate objective is to gain a more complete understanding of the spread of the poliomyelitis virus not only within the human body, but in the community, from one individual to another. The mechanism by which it maintains itself in human populations is not yet known. — Peter C. Stone, Director of Information, the National Foundation for Infantile Paralysis, Inc.

SEARCH FOR UNITY

If we are to have a durable peace after the war, if out of the wreckage of the present a new kind of cooperative life is to be built on a global scale, the part that science and advancing knowledge will play must not be overlooked. For, although wars and economic rivalries may for longer or shorter periods isolate nations and split them up into separate units, the process is never complete because the intellectual life of the world, as far as science and learning are concerned, is definitely internationalized, and whether we wish it or not an indelible pattern of unity has been woven into the society of mankind.

There is not an area of activity in which this cannot be illustrated. An American soldier wounded on a battlefield in the Far East owes his life to the Japanese scientist, Kitasato, who isolated the bacillus of tetanus. A Russian soldier saved by a blood transfusion is indebted to Landsteiner, an Austrian. A German soldier is shielded from typhoid fever with the help of a Russian, Metchnikoff. A Dutch marine in the East Indies is protected from malaria because of the experiments of an Italian, Grassi; while a British aviator in North Africa escapes death from surgical infection because a Frenchman, Pasteur, and a German, Koch, elaborated a new technique.

In peace, as in war, we are all of us the beneficiaries of contributions to knowledge made by every nation in the world. Our children are guarded from diphtheria by what a Japanese and a German did; they are protected from smallpox by an Englishman's work; they are saved from rabies because of a Frenchman; they are cured of pellagra through the researches of an Austrian. From birth to death they are surrounded by an invisible host—the spirits of men who never thought in terms of flags or boundary lines and who never served a lesser loyalty than the welfare of mankind. The best that every individual or group has produced anywhere in the world has always been availabel to serve the race of men, regardless of nation or color.—Raymond B. Fosdick: The Rockefeller Foundation—A Review for 1941.

THE HOME FRONT

Serious indeed are the situations in many communities of the state with respect to medical service and nursing, with the approach of winter. While many medical men and women realize the potential dangers, the public seems not yet to be fully aware of them.

Industrial accidents and illness are receiving increasing attention, and machinery for their prevention and care is being set in motion at an accelerated pace by national, state, and county medical societies, health departments, nursing associations, industry itself. But recent news reports seem to indicate that there will undoubtedly be difficulties in maintaining adequate heating in many private homes and other buildings; hot water supplies will probably be rationed. Conversion of oil heaters to coal or gas may not always be possible. Increases in respiratory infections, in industrial accidents, and illness are to be expected. In many localities, hospital facilities, both as to beds and to nursing and medical attention, will be insufficient to cope with increased demands upon them when these arise. Meatless days are already on the horizon; gasless, doctorless, and nurseless days and nights are not far off.

However, nothing is ever quite so bad or so good as it seems. The nation now has a vast reservoir of people trained in first aid — thanks to the tireless effort of the American Red Cross and the many physicians and lay instructors who have taught them. Nurses' aides are becoming more plentiful, enabling the hospitals to carry on in spite of the depletion of registered nurses. But not all of the women who might become nurses' aides can do so because of home, economic, or other factors.

Home nursing, however, can be of inestimable value in view of the fact that many families will of necessity have to rely on their own resources this winter, and, in addition, may have to care for a neighbor. Instruction in home nursing could be a practical attack on the problem of the maintenance of community health. It could be made a required subject in the public schools; it could be made a continuation course for many of those who have finished their first aid instruction.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-NINTH ANNUAL MEETING 1943

OREGON STATE MEDICAL SOCIETY HOUSE OF DELEGATES

Portland, September 12-13, 1942

The following are officers for the ensuing year:

OFFICERS AND COUNCILORS

President, George E. Henton, Portland.
President-Elect, Thompson Coberth, The Dalles.
Retiring President, William W. Baum, Salem.
First Vice-President, Edward H. McLean, Salem.
Second Vice-President, Raymond M. McKeown, Marshfield.
Third Vice-President, John R. Montague, Portland.
Secretary, Thomas D. Robertson, Portland.
Treasurer, James E. Buckley, Portland.
Councilors, John H. Besson, Portland and Stanley Lamb, Portland, First District; Lansford M. Spalding, Astoria, Second District; Bertram R. Shoemaker, Roseburg, Fourth District; Cccil W. McCain, Hood River, Sixth District; Leslie S. Kent, Eugene, Councilor-at-Large.

RESOLUTIONS

Resolved: That the Oregon State Medical Society express its sincere appreciation to W. W. Baum, our retiring president, for the unusually capable manner in which he has discharged the duties of his office, and particularly for his great contribution to an improved appreciation by the membership of the objectives and accomplishments of the Society which he has effected by personal visitations to the component societies throughout the state.

Resolved: That the Oregon State Medical Society express its thanks to Thompson Coberth, First Vice-President, for the effective way in which he has served as Acting President since President Baum entered active military service in April, 1942.

Resolved: That the Oregon State Medical Society express its gratitude to Wilson Johnston, State Advisory Chairman to the Procurement and Assignment Service, for the competent, conscientious and judicious manner in which he has discharged the difficult duties involved in the appropriate allocation of physicians to meet military and civilian needs.

Resolved: That the Oregon State Medical Society express its thanks to the delegates from the outlying component societies for the sacrifice involved in attending this year's session and for the devoted and attentive way in which they considered the questions before the House.

U. OF O. MEDICAL SCHOOL

University of Oregon Medical School's 46th General Hospital unit, now stationed at Fort Riley, Kan., is finding its processing and training period profitable, according to letters received at the Portland medical school. The unit has been looked upon with respect and admiration, according to one reporting doctor.

More physicians are joining the armed forces. The school has now lost 114 faculty members to Uncle Sam's ranks. New doctors joining up are: Major Howard P. Lewis, Ernest Boylen, Frank S. Dietrich, Charles W. Coffen, Willard F. Hollenbeck, George W. Millett, Charles O. Sturdevant, Arthur C. Jones, Harry C. Blair, Major Paul Bailey, George H. Lage and Scott Goodnight.

On the School Front

Second term of the accelerated medical school program will begin October 1. Approximately 275 students will register. Students and faculty members, despite the fact they have had no prolonged vacation for a year, put in excellent work. A certain amount of war fervor has been apparent in all classes, according to Ralf Couch, school secretary. Mr. Couch, incidentally, has done much work the past summer in all parts of the state in connection with evacuation plans mapped for use in case of enemy attack.

The federal security agency has awarded a loan fund to the school to assist students in need of financial help to remain in college. Third and fourth year students are eligible for the loan which is handled by the school. Students applying must meet certain requirements of scholarship and purpose. Loan up to $500 may be received in a twelve-month period. They will be paid back in four equal installments, starting twelve months after a student has completed his studential program.

David W. E. Baird, acting dean of the college, will attend the national meeting of the Association of American Medical Colleges on October 26-28 in Louisville, Ky.

Serious problems face the meeting, a few of which are:

1. The retention of adequate faculties in wartime.
2. Obtaining of deferments for premedical students of draft age, especially if draft laws are changed to permit induction of 18 and 19 year-olds
3. Deferment of necessary residents in teaching hospital program.
4. Procurement of scientific equipment and supplies and problems of priorities.
5. Devising of plans to provide intern training during a three-month overlapping period of the internship portion of the accellerated medical school program.

OBITUARIES

Dr. Orin A. Hess of Portland died August 18 at the age of 66. The cause of death was coronary thrombosis.

Dr. Samuel A. Brown of Canby died June 27 at the age of 90. The cause of death was pulmonary edema due to cardiovascular disease and septicemia.

Dr. Ernest D. Everett of Lakeview died August 16 at the age of 64. The cause of death was coronary thrombosis.

Dr. Frank Beauchamp of Albany died August 24 at the age of 64. The cause of death was angina pectoris.

Dr. Leo Ricen of Portland died September 9 at the age of 71. The cause of death was coronary thrombosis.

WOMAN'S AUXILIARY

The annual meeting of the Executive Board of the Woman's Auxiliary to Oregon State Medical Society was held September 12 in Portland in the Auditorium of the Medical-Dental Building. Mrs. C. E. Hunt, the President, presided.

Following the annual reports of officers and county auxiliaries, officers for the coming year were elected as follows:

Mrs. F. Bertram Zener of Portland, President.

Mrs. Grover C. Bellinger of Salem, President-elect.

A highlight of the luncheon, held at the Campbell Court Hotel between the morning and afternoon sessions, was the presentation to the Auxiliary of a hundred-and-fifty-year-old saddle bag by George Hayden Westerfield and a small surgical kit by Alfred C. Kinney.

Dr. Westerfield, himself eighty-four yeears old, told how the saddle bag had been carried by his father in the war of 1812. Dr. Kinney, who was the first as well as the fiftieth president of Oregon State Medical Society, is now ninety-two years of age. The gift he presented was dated 1871 and once belonged to his brother, Dr. Augustus C. Kinney. Both gifts will be on display at the Medical Museum, located in the Library of the University of Oregon Medical School, according to Mrs. Courtland Booth, chairman of the Museum Committee.

On Sunday, September 13, Mrs. Zener called her first board meeting for the new year. It was decided for its major project this year that the Auxiliary would concentrate on working with the Medical and Surgical Relief Committee of America. Their aim is to collect all kinds of surgical equipment, including old instruments which can be reconditioned and made available for civilian defense needs as well as for distribution to foreign relief through the proper agencies.

Mrs. U. C. Coe of Portland has been made chairman of the committee. It is hoped that all the county auxiliaries will take an active part in this necessary work and will communicate with Mrs. Coe, Route 1, Oswego, Ore., for any informatiton they desire.

(Mrs. George C.) Roberta D. Saunders,
Chairman Press and Publicity.

RECORD PRODUCTION OF SYNTHETIC SUBSTITUTE FOR QUININE IN TREATMENT OF MALARIA

The price of Atabrine, synthetic substitute for quinine in the treatment of malaria, has been reduced to a new low of $4.50 per 1000 tablets, Dr. Theodore G. Klumpp, president of Winthrop Chemical Company, announced as he disclosed receipt from the U. S. Army of the largest single order on record. At the same time, he revealed that production of Atabrine in this country was now in excess of 500,000,000 tablets per year, sufficient for full treatment of 33,000,000 cases of malaria, and was rapidly approaching a rate of 600,000,000 tablets per year, which would be sufficient to treat 40,000,000 cases.

"The new price to the government," Dr. Klumpp said, "reflects both recent increases in government orders and improvements in the manufacturing procss. The $4.50 price to the government compares with the former low of $6 per 1000 tablets, and with $66.66 in 1933, when Atabrine was first introduced to the American medical profession.

"At the new low price, it costs about as much to treat a case of malaria with Atabrine as to send an airmail letter. Actually the cost of medication with Atabrine is 6¾ cents per case, as compared with 27 cents for quinine. This is believed to be less than the cost of any other medication for any serious disease."

PEPTIC ULCER FILM AVAILABLE

There is now available for free showings before groups of physicians the first complete movie film on peptic ulcer, in color and with sound track. The film is entitled "Peptic Ulcer" and was produced under the direction of the Department of Gastroenterology of the Lahey Clinic of Boston. The American College of Surgeons has awarded its seal of approval to the film.

Running time of the film is 45 minutes, 1,600 feet of 16 mm. film, and cover a presentation of the following problems of peptic ulcer: pathogenesis, diagnosis, treatment, pathology, complications, including obstruction, hemorrhage, and perforation, gastric ulcer, surgery and jejunal ulcer. Arrangements for a showing of the film may be made by writing to the Professional Service Department of John Wyeth and Brothers, Inc., Philadelphia, who will provide projection equipment, screen, film and operator for medical groups, without charge.

TWO ENCOURAGING OUTLOOKS REPORTED FOR JUVENILE DIABETIC PATIENTS

Two encouraging outlooks for juveniles with diabetes are included in the findings reported in *The Journal of the American Medical Association* for September 19 by H. E. Eisele, M.D., St. Louis, based on a study by him of 73 juvenile diabetic patients surviving twenty years or more after the onset of the disease.

"Like the older patients, with onset of diabetes in adult life," Dr. Eisele says, "the juvenile diabetic patient has a constantly improving outlook for life and good health with the present day method of diabetic control and refined medical and surgical treatment. . . .

"A woman's chance for a healthy child after twenty years of diabetes with onset in childhood is becoming increasingly more favorable."

The data presented in his paper are said to be the first of this kind to be reported. The 73 patients were divided neary evenly according to sex. The average age at onset of the diabetes for the group was 9.0 years for the males and 8.7 years for the females.

In his conclusions Dr. Eisele says:

"Bearing in mind that all these 73 juvenile patients developed diabetes before insulin became available and accordingly present physically the worst possible end results for this age group and duration, certain conclusions are permissible:

"The most important complication is the early appearance of arteriosclerosis (hardening of the arteries). Thirty per cent of the members of this series who were examined roentgenologically (by x-ray) showed peripheral arteriosclerosis (in the extremities); 55 per cent showed moderate to advanced ocular arteriosclerosis (in the eye). Seventy per cent of the patients showing these changes have either hypertension (high blood pressure) or albuminuria (albumin in the urine) or both at an average age of 29 years.

"Impaired physical development in childhood occurred in 16 per cent of this series. With present day diabetic control and endocrine therapy this problem becomes much less acute than formerly. The physical status of the average adult in this series appears favorable even though active supplementary endocrine treatment in addition to insulin was started relatively late in the development of those physically retarded. The average male adult weighs 146 pounds . . . and stands 5 feet 7½ inches . . . the average woman weighs 127 pounds . . . and stands 5 feet 4 inches . . .

"Sex does not influence survival. The disease was hereditary in 62 per cent. Mental maladjustments are somewhat greater in the juvenile diabetic patients than in the nondiabetic persons of this age."

WASHINGTON STATE MEDICAL ASSOCIATION

PROCEEDINGS OF THE FIFTY-THIRD ANNUAL MEETING OF THE TRUSTEES AND HOUSE OF DELEGATES OF WASHINGTON STATE MEDICAL ASSOCIATION, SEATTLE, SEPTEMBER 12-13, 1942

Because of the exigencies of the War, commissioning of hundreds of physicians into the armed forces and demands upon the thinning ranks of those in private practice, the Board of Trustees ordered the cancellation of the 1942 convention of the Association, scheduled to be held in Spokane, August 17-19, and in place of the regular convention ordered a meeting of the Board of Trustees and the House of Delegates for Seattle, September 12-13, 1942.

BOARD OF TRUSTEES

FIRST SESSION

The Board of Trustees met at the Olympic Hotel, Seattle, September 12, at 1:30 p.m.

Officers and Board members present were:

George W. Cornett, President and Chairman, Herbert E. Coe, Homer D. Dudley, V. W. Spickard, A. J. Bowles, John H. O'Shea, Raymond L. Zech, Wilmot D. Read, George H. Anderson, J. F. Christensen and Warren B. Penney. Others attending the meeting were Doctors M. P. Graham and J. Reid Morrison; Mr. William T. Laube, attorney for the Association.

The annual reports of all committees as well as the report on the finances of the Association made by the Secretary-Treasurer were ordered referred to the House of Delegates. The Board reviewed the agenda of the House of Delegates and approved its procedure. All reports appear in the minutes of the House of Delegates sessions.

The minutes of the meeting of the Board of Trustees held May 24 1942, were read and approved. The report of the Secretary-Treasurer was approved. The Board reviewed communications and ordered them placed on file. Other actions taken by the Board were: Accepted the resignations of Frank Douglass as a member of the Board and now in the Army and H. T. Buckner, with U. S. General Hospital No. 50, as chairman of the Industrial Insurance and Health Committee; opposed prorationing of fees on old age medical care (141) and ordered rescinded its approval of the program submitted to them by the officials of the Social Security Department and recommended that the clause pertaining to prorationing in the agreement be withdrawn; ordered payment of expenses incurred by Spokane County Medical Society on promotion of 1942 convention which was cancelled; approved Harold E. Nichols as chairman of the Industrial Insurance and Health Committee; approved the actions and recommendations taken by the Executive Committee on medical care of Kaiser shipyard employees serviced under the Northern Permanente Foundation at Vancouver; reviewed policy motions made by the Committee on Medical Defense; ordered placed on file a communication from the State Department of Social Security seeking advice on medical care for state borderline cases; approved the decision taken by the Executive Committee advising the Director of Licenses against emergency licenses for out-of-state and foreign physicians; ordered an expert survey be made of medical costs under Initiative 151.

SECOND SESSION

September 13

The Board of Trustees met September 13 at 11:30 a.m. during a recess of the House of Delegates to select nominations and approve resolutions of authority for the new Secretary-Treasurer and Assistant Secretary-Treasurer. The Board nominated for the Committee of Publication (NORTHWEST MEDICINE) one year terms, the following: Herbert E. Coe, Seattle; S. F. Herrmann, Tacoma and R. N. Hamblen, Spokane.

HOUSE OF DELEGATES

FIRST SESSION

September 12

The House of Delegates of Washington State Medical Association was called to order by the Speaker, Wilmot D. Read, Olympic Hotel, Seattle at 3:30 p.m. On calling the roll, a quorum was found to be present. Minutes of the 1941 meeting of the House of Delegates held in Seattle were approved and adopted as published in the October, 1941, issue of NORTHWEST MEDICINE.

The following Committees were appointed by the Speaker: Resolutions: John H. O'Shea, Chairman, Edwin A. Nixon and Edwin W. Janes; Credentials: W. H. Tousey, Chairman, M. P. Graham and William A. Taylor; Necrology: J. F. Christensen, Chairman, W. B. Seelye and A. O. Adams; Committee to Choose Place of 1943 Convention: Homer D. Dudley, Chairman, C. R. McCreery and Donald A. Palmer.

REPORTS OF COMMITTEES

The Speaker called upon George W. Cornett, President and Chairman of the Board of Trustees, who presented a resume of his administration and for the reports of committees, resolutions and other items which were referred to the Resolutions Committee with instructions to report back to the House of Delegates September 13. The Reports follow:

Report of the President

At this time it is customary for your president to address you and report upon the year's activities of your Association. This has been an interesting year in many ways. The problems presented have been many and varied. Some of them have been solved with satisfaction; others were beyond our ability. Others required decisions that did not meet with approval in certain places. In appraising our actions may I ask that you criticize freely our results and hope that you do not condemn our motives.

Such successes as have attended our efforts are due largely to the wholehearted support of our officers, employees and committees. I would like at this time to express my sincere appreciation for the counsel and guidance given me by the Executive Committee and our legal advisor, Mr. William T. Laube.

If you have read the committee reports submitted to you earlier in the month, you should be familiar with the most important activities of your Association during the past year, and you should be prepared to act upon the various resolutions that will be presented at this session.

Your Association's affairs at this time are in good condition. You have a subsantail financial reserve but I would like to point out to you that better than 95 per cent of your Association's income accrues fom dues and that this income will drop approximately one-third during the coming year. Expenditures, although carefully watched, cannot be reduced to equal this. Rather than deplete your reserves I would favor an increase in dues until all members are back in practice again.

This is a legislative year and the necessity of unforseen expenditures may arise, and your Finance and Budget Committees should have additional funds at their disposal in event of emergency.

The practice of medicine is being greatly changed at this time by two powerful forces. The first of these is the war in which we are engaged. It has already taken many of the key men of your Association and before long will have taken over one-third of your active membership. Medicine is playing an outstanding part in all branches of the service, in industry essential to successful continuation of the war effort and in civilian defense. The second is social revolution which from many points is slowly and persistently attacking our system of scientific medical education and practice.

Wise leadership, clear thinking and forceful action are necessary, if we are to remain masters of our profession and not become slaves of an all-powerful dictatorship. Such changes as have occurred up to this time are too vague and incomplete to warrant any conclusions being voiced at this time.

To mention individually each member and committee to whom I am indebted for support during the past year would consume too much of your time so greatly needed for more important affairs, so may I, in conclusion, extend my thanks to every member of this Association for the courtesies extended me and for the honor and privilege of serving you.

George W. Cornett, *President*

Secretary-Treasurer's Report

The Secretary-Treasurer submits for your consideration the report of membership as of September 1, 1942:

Active	1,212
Honorary	74
Service	261
Total	1,547

733 members in the Medical Defense Fund; 92 of the 261 members in war service were former members of the Medical Defense Fund.

V. W. Spickard,
Secretary-Treasurer

Advisory Committee to the Supervisor of Public Institutions

On May 26, 1942, a Committee to be known as the Advisory Committee to the Supervisor of Public Institutions was appointed by President Cornett. The duties of this committee were stated to be to "advise the Supervisor in matters concerning health, medical care and treatment in the Public Institutions in the State of Washington."

The following members were appointed: H. E. Rhodehamel, Spokane; Nathan L. Thompson, Everett; Russel O. Settle, McNeil Island; and W. B. Penney, Tacoma. This Committee held a preliminary meeting at the Western State Hospital on June 10. W. B. Penney was elected Chairman. After general discussion of the services which this Committee might render, an inspection of the Western State Hospital was made under the guidance of Dr. Keller. It was thought advisable that the Committee be divided into sections to make visits to the various State Institutions. These inspections are now under way, several of them having been made, but no report is available at this time because no recommendations will be made till they are passed on by the full Committee at a later meeting.

Your Committee believes this is a move in the right direction and feels that the State is to be congratulated on having as a Supervisor for these institutions a man who has felt the need to call in the State Association for advice in regard to medical needs.

W. B. Penney, *Chairman*

Executive Committee

Following the Fifty-Second Annual Meeting of Washington State Medical Association held in Seattle, August 1941, the Executive Committee held fourteen meetings and had others scheduled before the 1942 meeting of the House of Delegates.

The Executive Committee reported its action on vital matters to each quarterly meeting of the Board of Trustees and carried out orders of the Board following its meetings. Other than to review routine communications and inquiries addressed to the Central Office of the Association, the Committee reviewed and acted upon the following major items:

1. Reviewed and approved all bills.
2. Reviewed and approved audit of accounts and management of funds.
3. Reviewed and advised on difficulties within societies.
4. Met with officials of a certain industry urging increase in salary of employed physicians.
5. Advised on appointment of physicians by state government.
6. Advised and cooperated with Selective Service System on Rehabilitation Fee Schedule.
7. The Executive Committee functions also as the State Committee on Procurement and Assignment Service for Physicians and cooperates with the Army, Navy and U. S. Public Health Service.
8. Assisted the President, upon his request, on problems concerning the presidency and in the advice of appointments for additional emergency committees.
9. Conferred with heads of departments of the state government affecting medical problems, public health and departmental policies.
10. Reviewed plans for state convention.

Raymond L. Zech, *Chairman*

Finance Committee

The report of the Finance Committee was read by the Chairman, V. W. Spickard, to the Board of Trustees and to the House of Delegates and is part of the original minutes of the Board and the House of Delegates on file in the Central Headquarters, 218 Cobb Bldg., Seattle. It may be perused by any member of the Association.

Graduate Medical Education and Hospitals

Because of the war emergency, the Committee did not recommend a statewide program for the year 1942. It did recommend a speaker of national recognition who accepted the invitation to appear on the 1942 program. This invitation was cancelled when it was decided by the Board of Trustees that no State Medical Association Meeting be held this year.

Washington State is given credit by the American Medical Association for the various scientific meetings held throughout the year under the auspices of organized medical groups.

It is the intention of the Committee to schedule a program to provide Graduate Medical Education as early as national and state conditions permit.

Homer D. Dudley, *Chairman*

Industrial Insurance and Health

The meetings of the Committee for 1941 and 1942 were held on the following dates, a summary of which is included.

September 8: A meeting was held at the Washington Athletic Club, on which occasion Mr. Harlin and members of his staff were present and the question was discussed as to the local medical advisors in the various communities in the State of Washington. Certain rules and regulations were also discussed but nothing definite was worked out in this meeting and a subsequent appointment was made for a further meeting.

September 17: The Committee met together with Mr. Harlin and other members of his staff, and at this meeting the rules and regulations governing the consultants for the Department of Labor and Industries were discussed. Also the question was discussed as to the fees to be allowed so-called standby anesthetists. Study was made of the revision of fees as charged by pathologists and recommendations made to the State as to the readjustment.

October 17: The Committee met upon the recommendation of the Department of Labor and Industries for the appointment of an advisor in the Spokane District. The Committee wrote the Spokane County Medical Society requesting them to send nominees which they did not do. Drs. Rhodehamel and Lewis were later appointed.

November 26: A general meeting was held of the Committee together with Mr. Harlin, Medical Director of the Department of Labor and Industries, and other members of his staff and the final rules which were discussed were accepted.

January 28: The Committee met again and discussed the question of the fee schedule of the pathologists and the treatment of hernia as requested by the Department of Labor and Industries. We also received the report of H. J. Whitacre of work done in the Tacoma District. He submitted a very complete and satifactory report.

April 15: The Committee met on this date to study the revision of certain rules of the fee schedule and also a discussion was held in regard to the medical consultants in other districts. Letters were written the medical societies of Snohomish, Whatcom, Clark, Lewis, Cowlitz, Grays Harbor, Clallam, Jefferson, Walla Walla and Skagit counties, requesting each society to name at least three men as consultants to be recommended to the Department of Labor and Industries.

May 26: The Committee met for review of the recommendations submitted by the various societies, and the Committee submitted all names to the Department of Labor and Industries for approval as the final appointment of the medical advisors comes from them. The meeting was also attended by Dr. Orlen J. Johnson, Counsel on Industrial Medicine of the American Medical Association, who advised on certain health problems following some investigations he made on his visit in the State of Washington.

July 21: The Committee met on this date to consider some grievances as submitted by the Department of Labor and Industries in regard to Dr. E. A. Rickards. After reviewing the files of five injured workmen, it was decided to request that the Department of Labor and Industries submit abstracts of all cases in which they have a grievance against Dr. Rickards, then in turn, the Committee would meet at a later date and review these grievances and forward same to the local County Medical Society.

Conclusions: This Committee, I feel, has done some very fine work during the past year, and it has had practically 100 per cent attendance at all meetings. The cooperation between the Committee and the Department of Labor and Industries has been excellent and I feel that the Department is working in accordance with the Committee. The feeling has been most friendly and it has been most helpful to both sides. I feel this Committee has now become an essential part of the State Medical Association in its relationship to the Department of Labor and Industries, and I believe that the Department of Labor and Industries appreciates the help that has been rendered by the Committee.

H. T. Buckner, *Chairman*

Maternal and Child Welfare

The same plan of geting together of this Committee was used this year as that of the preceeding, part of the Committee convening in Spokane and within a few weeks the remaining portion met in Seattle. Together there was 100 per cent attendance.

During this year the Medical Auxiliary has announced the appointment of a staggered Committee for the Maternal and Child Welfare; this group, comprised of five women, will exist as a permanent committee. R. S. Mitchell and V. W. Spickard were reappointed to serve five years on this Committtee. This entire group has acted in close cooperation with the State Department of Health in all the different activities of the "Committee of 8."

Obstetric questionnaires, which have been received from the Department of Health, have brought about quite an enlightenment on the causes of maternal deaths. These cause to emphasize the fact that too many deaths are due to the neglect of the patient to obtain prenatal care. Evidently education of the public must be more energetic; and in addition, more education should be given the doctor to impress upon him, first, that he should also be prepared to offer better prenatal care; and second, that he should request adequate consultation in difficult situations.

Through the pediatric questionnaire it has been revealed that something over one thousand babies die the first year of life in the State of Washington, one-third of them the first day, another third the first month, and the remaining third during the next eleven months. The percentage of the first month and of the next eleven months has been very greatly bettered in the last twenty years, but the percentage occurring the first twenty-four hours has not materially changed, even since 1910, i.e., for thirty-two years. It has also been noted that the causes of death as designated are not based on facts but rather supposition. Competently performed autopsies are the answer, in part.

During the past year a Forum has been conducted in NORTHWEST MEDICINE. Material has been furnished from all three of the northwestern states. Cooperation has been general and excellent. Every other month there is an obstetric problem presented and each alternate month a pediatric perplexity offered. Also, on the alternate months comments, explanations and conclusions of cases have been given.

A few months ago it was learned that a repetition of questions came to the Pediatric Department of the University of Oregon Medical School relative to pediatric difficulties. Occasionally, a general practitioner desires solution of his particular problem with some child or infant. So many of these difficulties are so similar in nature that they have a general answer and a general need which can be met through some medium to which all the doctors of the Northwest have access.

Report of the "Committee of 8"

1941 and 1942

The unusual functions of this Committee as manifested in Maternal and Child Welfare centers have proceeded as formerly. Much of value has been gathered through the obstetric questionnaires and passed on to the State Obstetrical Association; also considerable worthwhile information has ben received through the neonatal questionnaires. Unfortunately the latter activity has been discontinued for the present.

Refresher Courses. None of the itinerant courses were given, partly because of war conditions. In collaboration with the Oregon State Department of Health, the facilities of the Oregon Medical School were solicited to present a refresher course in pediatrics in December, 1941, and one in obstetrics in January, 1942. These were well attended. Comments which have come wholly unexpectedly and unsolited indicate that this method of advancing and promulgating medical information and intesifying interest in these subjects among general practitioners is a sound procedure.

A group from this Committee has formed a nucleus which is cooperating with the State Set-up for Defense. Its specific deliberation has been the study from the medical angle of the problems involved in the case of evacuation.

The particular point of concern is the moving and medical care of expectant mothers and children up to the age of five years occasioned by military necessity; that is, in lieu of invasion or in accordance with military orders.

A little over a year ago, because of the concentration of troops in and aroud Fort Lewis, an unexpected obstetric problem arose. Wives of soldiers moved into the community; many have had babies or are expecting to become mothers. Their numbers have very markedly increased since the advent of the war in December. No provision was in existence for the care of these girls, many of whom were not eligible for care in the State of Washington, to say nothing of Pierce and Thurston counties. This meant that they were without funds adequate for proper prenatal care, hospital or even delivery care. This Committee has acted in an advisory capacity. Colonel Mark and Major Helwig of the Fort were rescued from the dilemna by funds alloted from the Children's Bureau under the direction and supervision of Dr. Percy Guy, the Maternal and Child Welfare Chief in the State Department of Health. The latter has worked closely with the Maternal and Child Welfare Committees of both the Pierce and Thurston County Medical Societies.

A plan has been under operation now for nearly a year which has proved quite satisfactory for all concerned. Since the first of January the case load has run about thirty confinements per month.

The obstetric section of this Committee, in collaboration with the State Hospital Association, is establishing certain standards applicable to the obstetric departments of all hospitals but pertains more particularly to small maternity hospitals and nursing homes. This will be presented in the form of a resolution to the State Department of Health through Dr. Guy, Chief of the Maternal and Child Health department. H. H. SKINNER, *Chairman*

Medical Defense

Disposition of malpractice cases from September 1, 1941, to July 15, 1942:

4 cases dismissed.
1 case closed.
6 settled out of court (for a total of $5,200).
1 found for the plaintiff for $1,125.
2 found for the defendant.

In addition, the following cases are still carried in the active file:

5 members were served with papers for suits since September, 1941.

8 members were served with papers for suits prior to September, 1941, with no further action to date.

4 members received threats of suits since September, 1941.

8 members were served with papers for suits prior to September, 1941, with no further action to date.

HOMER D. DUDLEY, *Chairman*

Neoplastic Committee

The first meeting of the Neoplastic Committee was on December 8, 1941, after the declaration of war.

Various members expressed themselves as being of the opinion that the war emergency, particularly in the western half of the state, would occupy the attention of the medical profession during the entire year and it would not be possible to carry on with the usual program among the doctors.

The women's organization, headed by the State Commander, Mrs. Ralph Hanson of Spokane, carried on the usual educational program. They had a fair amount of success in some communities and in other places there was difficulty in organization work because so many of the women were engaged in war activities.

There was a meeting of the Neoplastic Committee on July 12, in the Washington State office. Members present were: Milo Harris, B. D. Harrington, Donald Trueblood, J. T. Rooks and C. B. Ward. A. P. Duryee and Mrs. Anna Peterson, Regional Supervisor of the Women's Field Army were also present.

The meeting was to discuss appointment of a new State Commander and a letter was read from Mrs. Ralph Hanson of Spokane, resigning State Commander. It was voted that her resignation be accepted. It was voted that a letter be written to Mrs. Hanson thanking her for her work as State Commander. It was voted that Mrs Peterson be requested to spend the next week in the State of Washington, interview a number of women in different parts of the state and select a new State Commander.

There was quite a discussion as to possible candidates and after this, the meeting was adjourned.

CHARLES B. WARD, *Chairman*

Publication

The report of the last annual meeting of the State Association was published in the October, 1941, issue of NORTHWEST MEDICINE under the Washington section.

In each issue of the Journal during 1941 there have been published reports and communications from the state office pertaining to the affairs and proceedings of the State Association. All matters submitted to the Journal have been published from month to month, prepared for the most part by the Executive Secretary. The Journal management has constantly worked in cooperation with the state office. It maintains the purpose of promoting the welfare of the State Association and any matter for which publicity is desired is solicited by it. J. M. BOWERS, *Chairman*

Public Health and Sanitation

DIABETES, SOCIAL HYGIENE AND LABORATORY PROBLEMS

The Committee on Public Health and Sanitation and the Subcommittees on Diabetes, Social Hygiene and Laboratory Problems in Public Health submits for your consideration its annual report for 1941-1942.

Despite the impact of war and the loss of two committee members to the armed forces, the committee effected reasonable continuity with the previous programs of this Committee, and was successful in completing a number of projects established at the beginning of the year.

PROJECTS COMPLETED

1. In compliance with the resolution of the House of Delegates of 1941, as reported in NORTHWEST MEDICINE, Vol. 40, No. 10, page 384. This resolutiton authorized the Public Health and Sanitation Committee to prepare a form to be attached to Wassermann slips and to be filled in by physicians at the time they submit blood samples to the Public Health laboratory for serologic examination, and further provided that certain tabulation and analysis should be made of such reports.

In effecting compliance with this resolution, forms were prepared and attached to Wassermann slips, communications were addressed to county medical societies by the Secretary-Treasurer of the State Medical Association, an editorial was prepared for NORTHWEST MEDICINE, and the Executive Committee was advised to follow-up with direct communications.

Analyses of tabulations and tabulations were submitted to Dr. Charles Larson.

The election of the use of laboratories or private laboratories to perform serologic tests is the responsibility of the private physician. While completion of the form was not effected in numerous instances, in general there was a demonstration on the part of the profesion to discharge its responsibility in this connection.

2. Drs. Greenwood and Wright made some studies relative to immunization against smallpox and state that they feel all cases of chicken-pox should be treated as potential cases of smallpox, particularly in the instance of the "adult" type of chicken-pox, in whichc there is present malaise, high fever, bone and joint pains. They recommend the present policy of the Washington State Medical Association and the State Department of Health in relation to chicken-pox and smallpox be continued.

3. Byron F. Francis, assigned to the study of respiratory infections and pneumonia, gave particular attention to the occurrence of virus pneumonia, and concluded that the efficiency of the sulphonamides as a therapeutic agent was extremely doubtful. He emphasized the importance of the use of bacteriologic cultural methods in the diagnosis of respiratory infections and pneumonia as a prerequisite to effective therapy. He pointed out the importance of increased crowding in housing as a factor in the potentital spread of respiratory disease and pneumonia. It is probable that Dr. Francis has fairly thoroughly covered the essential considerations of this assignment and brought them to a workable conclusion.

4. Dr. Johannesson reported that an educational campaign should be conducted among the parents, particularly by the Health Department, at the time of the issuance of birth certificates in the matter of immunization against diphtheria. Educational methods suggested were: (1) direct mail through birth certificates, (2) preschool clinics, (3) news stories through public press, (4) contest posters, etc., through schools, (5) appeal through parent-teacher associations, and (6) through local medical societies with speakers, contacts with schools, organizations, etc.

5. The work of the Subcommittee on Social Hygiene was interrupted by Dr. Dewey entering the Army. It is the consensus of opinion of that Committee that the control of venereal disease requires an effective program which will include the following: (1) repression of prostitution and abolishment of houses of prostitution and avoidance of segregated districts, (2) proper epidemiologic follow-up of contact cases to insure that sources are under treatment and that new cases are brought under treatment, and (3) emphasis upon a sound and sane program of public educatiton concerning venereal diseases.

The work of the Committee on preparation of an article for NORTHWEST MEDICINE on the subject of Venereal Disease Control yet awaits completion.

6. The Subcommittee on Diabetes issued Bulletin No. 1 to all medical societies which stated in part that the Subcommittee shall be for the purpose of studying the problem of diabetes and molding a program of education on the

subject of diabetes, and that a register of diabetics may be established by each county medical society. The bulletin further outlines the 1941-42 plans of the Committee and emphasized that its present concern is with publicity and educational aspects of the undertaking.

In this connection, the Committee was responsible for distribution of certain diabetic information packets, made available through the Metropolitan Life Insurance Company. This distribution was to county medical societies of the state.

Also, with the approval of the Medical Association, there was formed a Washington Diabetes Association. Its success will depend largely upon the understanding of the physicians of the state.

7. The Public Health and Sanitation Committee recognized the possibility of persons enrolled in Civilian Defense programs serving under condititons which would enhance their hazard of contracting smallpox and typhoid fever at the time of an incident. Therefore, a letter was addressed to all county medical societies setting forth the problem and suggesting a solution relative to the vaccinatiton of these people. Similar letters were likewise sent to local health officers, that the medical society and local health officers might cooperate in their planning to meet the situation.

General Comments

It has been the endeavor of your Committee on Public Health and Sanitation and associated subcommittees to: (a) effect continuity with the previous work of this Committee, (b) to stimulate new endeavors, and (c) to coordinate under one committee the endeavors of several related committees through the device of subcommittee assignments. It is hoped that these objectives have been reasonably attained and that such attainment may have been of service to local medical societies and to the administrators and membership of the State Medical Association. The Committee does not claim perfection in its accomplishment. It feels that its experience during the year may have demonstrated the advisability and practicability of coordinating the work on similar related matters by assignment of such matters to subcommittees under the Committee on Public Health and Sanitation.

The Committee reiterates the objectives set forth in the committee's report to the Board of Trustees and House of Delegates in 1939; namely, (1) to function as working contact Committee between the Association and the State Department of Health in studying public health problems and in assisting in their solution, (2) from a long-range comprehensive public health program, to yearly or oftener as directed by the Board of Trustees of the Association, submit recommendations to the Association concerning specific and immediate programs for consideration and action of the Association.

Problems Which Should Be Considered by the Committee on Public Health and Sanitation and Associated Subcommittees During the Ensuing Year:

A. *New Problems*:

1. Emergency Medical Service and Civilian Defense, including the planning of medical care in the event of evacuation.

2. Industrial Hygiene (in contradistinction to industrial medicine). Industrial hygiene involves the application of the principles and practices of preventive medicine used in Public Health to the health problems of the workshop and home of the worker. It is concerned with the control of health hazards, such as industrial poisons, and control of communicable diseases, including venereal disease and tuberculosis.

3. The medical aspects of day nursery schools caring for children of mothers employed in war industries. The Committee should be active in recommending to the Board of Trustees and through them to the profession its responsibility in plannnig of the pattern of medical service to such children that there may be no unnecessary compromise on medical standards, and that services may be based on a realistic rather than a theoretical foundation.

B. *Old Problems Needing Continued Emphasis*:

1. Continued and more effective emphasis upon immunization, particularly now that there are and will be fewer physicians to serve the public. Physicians should not need to spend their energies in the care of preventable diseases.

2. Bringing to all physicians a clear understanding of the problems of venereal disease, and each physician's responsibility in the problem that there may be an avoidance of any unnecessary loss of man-power in our war effort because of venereal disease.

3. Continued emphasis upon what can be done in the control of diabetes.

Suggestions Relative to the Organization of the Committee on Public Health and Sanitation and Subcommittees Thereunder:

A. That matters relating to Public Health and Sanitation be assigned to the Committee on Public Health and Sanitation or subcommittees thereunder, that the work of the committees may be coordinated and more particularly that those working in related fields may be acquainted with the endeavors of each other in order to avoid unnecessary duplication and in order to promote efficiency.

B. That the Committee on Public Health and Sanitation be composed of a chairman, and chairmen of subcommittees thereunder. In support of this suggestion, it should be true that such an arrangement would enable the more important matters to be assigned to subcommittees, and yet enable the chairmen of the subcommittees to meet with the chairman of the parent committee to lay out a coordinated plan of attack and to correlate endeavors of the subcommittees and reports thereof.

C. That consideration be given to the appointment of the following Subcommittee Chairmen:

1. Subcommittee on Diabetes.
2. Subcommittee on Social Hygiene.
3. Subcommittee on Laboratory Problems in Public Health.
4. Subcommittee on Emergency Medical Service in Civilian Defense.
5. Subcommittee on Industrial Hygiene.
6. Subcommittee on the medical aspects of day nursery schools caring for children of mothers employed in war industries.
7. Subcommittee on Tuberculosis Control.

D. That once or twice during the year there should be a joint meeting between the Committee on Public Health and Sanitation and the Committee on Maternal and Child Welfare to insure a general knowledge of the mutual interests and endeavors of those two committees that their endeavors may be coordinated and mutually supportive.

Donald G. Evans, *Chairman.*

Public Laws

The Committee desires to caution the profession on Initiative No. 151 to be voted upon by the people of the state at the general election in November. This Initiative, created by the Washington Old Age Pension Union and advertised under the misnomer "old age pension law," carries greater provisions than the present law, Initiative No. 141, better known as the Senior Citizens' Grants Act and, like 141, has many vague provisions.

It may be that the sponsors of 141 and now 151 purposely designed the vague language, particularly in the medical care sections of the two measures, for interpretation of the Attorney General and the courts of the state. The term "Doctor," for instance, under 141, has been interpreted as meaning any licensed practitioner of the healing arts who is licensed to practice within his prescribed law. Under such an interpretation all licensed cultists are permitted to treat the recipients or old age pensioners. The rub comes when this definition of "Doctor" carries along with 151 which broadens the medical coverage from and including old age pensioners to all others who now are and may become recipients of assistance from the Social Security Department. In short, under 151, medical care will be extended to those on relief, the blind, those receiving child welfare grants and "all dependents" of a recipient.

We should like to call attention again to the evident design of vagueness in items (5) and (6) of Section 15 of Initiative 151 which state:

"(5) Provision for special or supplemental diets as prescribed by applicant's doctor."

"(6) Such additional care and services as may be necessary to maintain or restore applicant's physical and mental health."

The Attorney General's office has had more than 700 lawsuits filed in the courts to clarify 141. What clarification can the courts give to the above-named items on "diets" or "necessary services to maintain or restore physical and lental health?" Is a "diet" as prescribed by any "doctor" all things on the grocery store shelf, the vegetable counter, the fish market or the butcher's block? What is "mental health"?

If Initiative 151 is defeated, 141 will still be a law. Old Age Pensioners, under 151, may lose what they have gained under 141.

Initiative 151 should be defeated.

W. B. Penney, *Chairman.*

Public Relations

The Committee is primarily concerned in 1942-1943 with the opinions and views of candidates for the state legislature (House and Senate), candidates for the Congress of the United States and, beginning in January, 1943, with the activitiesof the legislature when in session. A survey of the holdovers and candidates for the state legislature shows that o fthe 46 members of the Senate, 19 are holdovers (not up for election) and of the 19 Senate members, 11 are Democrats and 8 are Republicans. Of the remaining 27 seats in the Senate, there are 105 candidates contesting in the primary election, 60 Democrats and 45 Republicans throughout the state.

The entire membership of the House is up for election and of the 99 seats in contest there are 209 candidates in both parties, 186 Democrats and 123 Republicans, seeking nominatitons in the primaries.

With the exception of the Fifth District, where Congressman Leavy resigned to accept an appointment as a U. S. judge, all incumbent Congressmen are seeking reelection.

The Public Relations Committee will endeavor to keep all physicians informed as to the candidacies of state and national legislators, progress of initiatives and direct bulletin service to all legislative chairmen on legislative activity during the session of the legislature.

Frank H. Douglas, *Chairman.*

Scientific Work

It has been the duty of the Committee to prepare and arrange the scientific program and exhibits for the annual conventions. This program was prepared and scheduled when the 53rd annual meeting was ordered cancelled because of the war emergency.

We may state, however, that more than thirty speakers and six panels were scheduled and several interesting exhibits. The Committee also arranged for two outstanding natitonal speakers as well as papers by physicians in the Army and Navy.

R. E. Mosiman, *Acting Chairman.*

Study of Medical Care

During the past forty years there have been such phenomenal advances in the various sciences that have to do with the detection, prevention and relief of various diseased conditions, and so much publicity attending it, that it is natural that everyone should feel he should have the opportunity to have the benefit of them. How can this be done?

We are living in a very rapidly changing world, and there has never been a time when there was greater need for us to think clearly, see clearly and speak clearly.

We are quite satisfied that when this world war is over there will be quite a complete social and economic alteration. How will this affect the care of the sick and injured, the physical and mental welfare of the coming generation?

Laissez-vous faire is out, whether it is the practice of medicine, the cutting of logs, or whether we like it. Some system of prepay medical care is going to be established. Are we, who know what is needed and how to furnish it, going to direct it, or are we going to let it become a political football?

Your Committee has endeavored to obtain certain facts and figures relative to the increasing use of the roentgen ray, laboratory and hospital in diagnosis and treatment, and the relative decrease in case cost, but we have not been able to obtain enough to be of value.

In studying the various systems of prepay medical care in operation in this country at this time, we are impressed with their various distinctive aims and purposes, and also by their exclusions. The thoughts come around to the question, what is the purpose, the immediate and end-result, we hope to achieve by any prepay form of medical care?

Question 1. Do all people who are sick need medical care, and if they do, should all be provided for by prepay?

Question 2. Is the purpose of prepay to improve the physical and mental well being of all of our citizenry?

Question 3. Or are we just going to set up another racket, political, economic or what someone is interested in?

Now, to answer these questions:

Question 1. Why not? Whether a man with a cut head tripped over something in the dark, was hit by a highwayman or was in a drunken brawl, has he not the same kind of an injury and does he not need the same treatment? Are we rendering medical service, punishing crime, rewarding virtue?

Question 2. This needs some elucidation. Shall we say to everyone: All your medical care is now provided for, do as you please? That certainly will not improve the physical and mental well-being of our citizenry. If we are seriously interested in improving the well-being of our citizens, we must seriously carry on a continuing course on exercise, food, rest, state of mind, etc., and encourage a state of mind where each individual will take pride in his physical and mental fitness, not in thoughtless and reckless dissipation.

Question 3. This depends entirely upon us. Ninety per cent of the people will support the doctors, if they will develop a program and establish leadership.

Conclusions and Recommendations

At the present time, the wage earners secure prepay medical care through the several (17) county society medical service bureaus, and various private contracts, with groups of clinics. In short, the machinery is already set up to take care of the low wage earner. So-styled social or state medicine, if introduced, will find this type of medical insurance already in operation. There is no need for another plan.

However, the present medical service bureaus are not closely related. Each is quite independent of the other. There is no uniformity of coverage, operation or fee schedule. Some of the smaller bureaus are controlled by a local medical clique. Near large cities the insured workman of one bureau may be in the territory of a neighboring bureau. A satisfactory system of exchange of patients is lacking. In some bureaus there is no annual audits made of the funds involved.

The best solution seems to be a central medical bureau office to cover the entire state. This will result in a substantial saving, uniformity of operation and smoothing out local controversies. No big corporation would handle its affairs otherwise.

The prepay medical contracts now involve large sums annually with perhaps 100,000 workmen under medical contract through the state. The committee strongly advises this centralization plan.

A definite problem has arisen in the larger cities which covers a large area. Doctors are frequently called from one end of the city to another to make calls. The doctor called may live five to ten miles distance from the patient, yet a good fellow practitioner may live but a few doors from him.

This means a waste of time, when doctors can ill afford it, a waste of gasoline and tire mileage. Large cities could be easily divided into medical wards or districts. Certain doctors could be assigned to these districts to make the emergency and night calls. This is definitely a war problem.

We recommend, therefore, that a special committee be appointed to draw up a program of complete medical prepay care for all wage earners below a certain income, incorporating a plan of centralization for all of the medical service bureaus.

A. P. Duryee, *Chairman.*

Tuberculosis

The present chairman was appointed late in 1941 after John E. Nelson asked to be relieved of that duty. It is regretted that no regular meeting of the Committee was held during the year. After December 7 it has been increasingly difficult to get members of committees together.

Although the round table discussions before the county medical societies, which were held last year, were considered highly successful, it was not thought wise to continue them during the present year. Rather, it had been proposed that the Committee consider an investigation of sanatorium facilities in various parts of the state in respect to tuberculosis. If such an investigation revealed that the needs in respect to tuberculosis were not being met either in personnel or physical facilities, recommendations as to remedial measures would be made, hoping thereby to obtain the full support of the Washington State Medical Association for any proposed changes. However, nothing definite was done about this matter. But the overcrowding caused by the growth of defense work in some sections of the state makes such consideration all the more important, and it is recommended that the Committee do something definite about it next year.

During the past year there was an extension of the diagnostic chest clinic service in the state. This work, under the auspices of the State Department of Health, was started by Kenneth Soderstrom, but for most of the past year Cedric Northup, the new State Tuberculosis Control officer, has been in charge. It is strongly urged that the physicians of the state avail themselves of this consultation service for their chest problems.

Byron F. Francis, *Chairman.*

Report of Woman's Auxiliary to Washington State Medical Association

As President of the Woman's Auxiliary to Washington State Medical Association, I wish to report the four outstatnding accomplishmhents of the year:

1. Winning the first prize in the annual *Hygeia* contest sponsored by the American Medical Association with a total number of 1139 subscriptions. The Auxiliary is convinced that the widespread circulation of *Hygeia* is essential in counteracting the effect of other so-called health magazines.

2. Having the largest number of *Bulletin* subscriptions sent in my any one state, 131 to be exact. The *Bulletin* is to the Auxiliary what the *A.M.A. Journal* is to the medical profession.

3. Adding a new county auxiliary (Lewis) to the state organization, and revitalizing our inactive auxiliary (Snohomish) into a live, enthusiastic one.

4. Keeping the membership at over 700 in spite of the war. This was done by frequent communications to every eligible doctor's wife in the state.

As the Auxiliary to the Washington State Medical Association goes into its 12th year, with fourteen organized counties, may I ask for it the continued loyal support of the Medical Association? Not only is your financial assistance greatly appreciated but the kindly guidance of your Executive Committee: Drs. Homer D. Dudley, Raymond L. Zech and Vernon W. Spickard, has been a source of great satisfaction to me throughout the year. And without the use of your state office which Mr. Arthur Anderson put at my disposal, the work could not have gone forward.

In these days of war and turmoil it is my hope that the Woman's Auxiliary may help keep alive the principles of democracy for which the State Medical Association stands. A live and understanding group of doctors' wives through their many contacts with lay organizations, may be of great help in the future.

I should like to recommend that the Medical Association use the Auxiliary even further in promoting their public relations and legislative programs. And I should also like to recommend that delegates, who come from counties in which there are no auxiliaries, urge their wives either to form local auxiliaries or else to join the State Auxiliary as members at large.

I regret that the State Convention could not convene in Spokane as planned but feel the decision was a wise one. In order that Mrs. Emmett L. Calhoun, the new President of the Auxiliary, would not be delayed with her plans, the Executive Board of the Auxiliary met Monday, August 17, at the Olympic Hotel in Seattle. At this time business was completed for the year and new officers elected and installed. A copy of the minutes and resolutions of this meeting is on file with your Executive Secretary, Mr. Anderson.

Resolution

Whereas: The mortality of infants in the State of Washington is a little over one thousand the first year of life; and

Whereas: One-third of that number die the first day; and

Whereas: During the past twenty years the percentage of mortality the first month and the next eleven months has been greatly reduced; and

Whereas: The mortality percentage of those dying the first day has not changed at all since 1910; and

Whereas: During the war period, with shortage of nurses and fewer doctors, particular care will be necessary to lower this mortality rate; and

Whereas: More and more babies are being born in hospitals under increasingly better conditions; and

Whereas: We, as mothers, as well as being members of the Medical Auxiliary, are therefore doubly interested in this particular problem, be it

Resolved: That through the Maternal and Child Welfare Committee of the Medical Auxiliary an intensive study of this situation shall be made to ascertain the causes of our high mortality; also what means of preventiton are feasible. Be it further

Resolved: That in the course of this study and by means of a more understanding investigation, the women's clubs and other women's organizations, such as the Parent-Teachers, the Legion Auxiliary, etc., be requested to take an active part in the way of investigation and education of their own membership as well as at large throughout the state; and be it further

Resolved: That the Auxiliary Committee on Maternal and Child Welfare shall in cooperation with the Maternal and Child Welfare Committee of the Washington State Medical Association present their findings, analysis, and recommendations yearly, both to the State Medical Association as well as to the State Auxiliary.

(Mrs. James H.) Sabra C. Berge, *President.*

Proposed Amendment to Section 3, Chapter 2, of the By-Laws

Strike the period after the first sentence of said Section 3, substitute in lieu thereof a semicolon and add the following:

"Provided that said annual dues may be increased or decreased by the Board of Trustees for a period not longer than one year."

SECOND SESSION

September 13

The meeting of the Second Session of the House of Delegates was called to order by the Speaker, Wilmot D. Read, at 11:15 a.m., Olympic Hotel, September 13. Upon calling the roll, a quorum was found to be present.

Report of Resolutions Committee

The Speaker called upon the Resolutions Committee which presented the following reports:

Report of the President: The Committee has perused the report of the President, George W. Cornett, and commends him for his excellent leadership during the past year. The Committee recommends the approval of the report. Carried.

Secretary-Treasurer's Report: The Committee recommends the adoption of the report. Carried.

Advisory Committee to Supervisor of State Institutions: The Committee recommends the adoption of the report. Carried.

*Executive Committee*s The Committee recommends the adoptiton of the report. Carried.

Finance Committee: The Committee recommends the adoption of the report. Carried.

*Finance Committee*s The Committee recommends the adoption of the report. Carried.

Graduate Medical Education and Hospitals. The Committee recommends the adoption of the report. Carried.

Industrial Insurance and Health: The Committee recommends the adoption of the report and especially commends the chairman and the committee for its excellent work. Carried.

Maternal and Child Welfare: The Committee recommends the adoption of the report. Carried.

Medical Defense: The Committee recommends the adoption of the report. Carried.

Neoplastic: The Committee recommends the adoption of the report. Carried.

Publication: The Committee recommends the adoption of the report. Carried.

Public Health and Sanitation: The Committee recommends the adoption of the report and especially commends the chairman and the committee on its excellent work. Carried.

Public Laws: The Committee recommends the adoption of the report. Carried.

Public Relations: The Committee recommends the adoption of the report. Carried.

Scientific Work: The Committee recommends the adoption of the report. Carried.

Study of Medical Care: The Committee recommends the adoption of the report. Carried.

Tuberculosis: The Committee recommends the adoption of the report. Carried.

Woman's Auxiliary: The Committee recommends the adoption of the report. Carried.

Resolution on Infant Mortality: The Committee recommends that this Resolution be disapproved because it calls for investigation of medical aspects by lay organizations. Carried.

Amendment to Section 3, Chapter 2 of the By-Laws: The Committee recommends the adoption of this Amendment to the By-laws. Carried.

Necrology

Whereas: Eighteen of our members have passed to the Great Beyond since the 1941 session of the Association, be it

Resolved: That the House of Delegates of Washington State Medical Association recognizes the demise of these former fellow members and instructs the Secretary-Treasurer to inscribe with honor and regret the following names upon the records of the Association:

L. H. Jacobson, Seattle, age 60, died October 4, 1941.
J. M. Corpening, Harrington, age 71, died November 1, 1941.
C. M. Harger, Seattle, age 48, died November 13, 1941.
J. A. Walker, Dupont, age 72, died November 15, 1941.
S. D. Brazeau, Spokane, age 67, died January 1, 1942.
F. G. Ulman, Enumclaw, age 71, died January 29, 1942.
W. G. Booth, Seattle, age 82, died February 6, 1942.
C. E. Montgomery, Walla Walla, age 62, died March 26, 1942.
R. S. Wells, Colville, age 66, died April 5, 1942.
J. M. Sleicher, Chehalis, age 69, died April 6, 1942.
I. H. Moore, Seattle, age 87, died April 12, 1942.
Oscar Stenberg, Spokane, age 67, died April 24, 1942.
A. E. Gerhardt, Wenatchee, age 60, died May 3, 1942.
H. Z. Dean, Prosser, age 71, died May 14, 1942.
J. A. Johnson, Tacoma, age 65, died June 12, 1942.
S. H. Johnson, Bellingham, age 73, died June 20, 1942.
J. E. Pruecel, Colfax, age 74, died July 13, 1942.
H. G. Willard, Tacoma, age 67, died August 28, 1942.

J. F. Christensen, *Chairman.*

1943 Meeting Place

An invitation was presented by Donald A. Palmer on behalf of the Trustees of the Spokane County Medical Society to the Washington State Medical Association to hold its 1943 meeting in Spokane. It is recommended by htis committee that the invitation be accepted.

Homer D. Dudley, *Chairman.*

The Committee's report and the invitation were accepted.

Election of Officers and Committee Members

President-Elect: V. W. Spickard, Seattle.
Vice-President: Herbert E. Coe, Seattle.
Speaker, House of Delegates: Wilmot D. Read, Tacoma.
Secretary-Treasurer: A. J. Bowles, Seattle.
Assistant Secretary-Treasurer: Bernard P. Mullen, Seattle.
Delegate to A.M.A.: Raymond L. Zech, Seattle.
Alternate Delegate to A.M.A.: Warren B. Penney, Tacoma.
Trustees, Eastern Division: Joseph E. Bittner, Jr., Yakima; George H. Anderson, Spokane, and Carroll L. Smith, Spokane.
Trustees, Western Division: George R. Marshall, Seattle; J. F. Christensen, Kelso, and Milton P. Graham, Aberdeen.
Finance Committee: V. W. Spickard, Seattle.
Publication Committee: Herbert E. Coe, Seattle; R. N. Hamblen, Spokane, and S. F. Herrmann, Tacoma.

There being no further business the House of Delegates adjourned at 12:15 p.m., Sunday, September 13, 1942.

V. W. Spickard, *Secretary.*

ADDITIONAL COMMISSIONS FOR WAR SERVICE

In the August issue was published a list of Washington physicians commissioned for army and navy service, as of July 25. Herewith is presented a list of members who have been commissioned since that time as of date September 25. This addition of 78 men makes 288 of our members enrolled in war service.

ARMY

Atwood, H. S., Yakima
Bailey, G.S., Seattle
Baker, W. Y., Seattle
Benson, J. A.,Tacoma
Bledsoe, C. W., Seattle
Boyd, J. L., Seattle
Brooke, J. R., Tacoma
Brown, R. C., Olympia
Broz, W. R, Seattle
Chew, E. M., Seattle
Clark, J. A., Seattle
Countryman, C. W., Spokane
Crow, D. R., Seattle
Dietrich, C., Tacoma
Dillon, R. N., Seattle
Dirstine, M. J., Seattle
Dodds, G. A., Seattle
Douglass, F. H., Seattle
Epton, J. W., Opportunity
Fitzmaurice, B. T., Seattle
Franke, F. A., Everett
Frewing, H. L., Vancouver
Fuller, M. F., Aberdeen
Geehan, J. W., Seattle
Goss, H. L., Seattle
Hanks, T. G., Seattle
Highmiller, R. H., Olympia
Hoedemaker, E. D., Seattle
Jared, M. S., Seattle
Jarvis, J. B., Tacoma
Johnson, P. O. C., Seattle
Keyes, D. C., Bellingham
Keyes, R. P., Bellingham
Kimball, C. D., Seattle
King, R. L., Seattle
Knudson, W. C., Seattle
Laughlin, R. C., Seattle
Leibly, F. J., Seattle
Lewis, A. E., Seattle
Linkletter, A. C., Shelton
Lynch, H. C., Yakima
McCandless, C. M., Tacoma
McCartney, R. C., Anacortes
McDermott, J. P., Chehalis
McDonough, R. C., Spokane
McLemore, H. H., Spokane
Madsen, H. J., Sedro Woolley
Miller, R. B., Bremerton
Moren, W. C., Bellingham
Murphy, N. W., Seattle
Ostrom, L. B., Seattle
Plant, R. K., Seattle
Rankin, F. W., Seattle
Reekie, R. D., Spokane
Reiswig, E. A., Seattle
Rogers, P. M., Seattle
Roe, J. A., Olympia
Sarro, N. S., Seattle
Seelye, W. B., Seattle
Snyder, M. B., Chewelah
Spendlove, J. G., Seattle
Stafford, D. E., Seattle
Stroud, C. W., Seattle
Tait, A. C., Pullman
Taylor, J. O., Auburn
Thomas, H. B., Seattle
Valentine, H. V., Spokane
Wilson, G. E., Seattle
Wollenweber, E. J., Seattle
Wood, Q. L., Seattle

NAVY

Kretz, A. W., Hoquiam
Loe, R. H., Seattle
Leuhrs, R. O., Vancouver
McCoy, K. M., Yakima
Murphy, R. B., Seattle
Nelson, E. P., Seattle
Orr, D. W., Seattle
Shuler, E. C., Seattle

MEDICAL NOTES

50th General Hospital. On September 1 this hospital unit left Seattle for Camp Carson, Colorado. Its personnel consisted of forty-nine doctors, all of whom are from Seattle except three from Tacoma and one each from Centralia, Port Orchard, Yakima and Lewiston, Idaho. There are also seven dentists, all from Seattle except one from Anacortes. Lieut.-Col. H. T. Buckner is director of the unit. The ranks assigned include three lieutenant colonels, thirteen majors, twenty-one captains, eleven first lieutenants, one second lieutenant among the physicians; and among the dentists, one major, three captains and three first lieutenants. Eighty-seven nurses, commissioned as second lieutenants, departed later for Camp Carson.

Navy Hospital Opened. On August 23 the new Navy Hospital was dedicated at Seattle, located at 15th Avenue N. E. and East 150th St. The hospital covers 165 acres, and consists of forty-one buildings with provision for 800 patients. It was constructed at a cost of $4,000,000. The commanding officer is Capt. M. F. Murdock (M. C., U. S. Navy). The hospital is manned by both civilian and naval personnel. Although the hospital is located some distance beyond the city limits, it is complete in itself, with water supply, sewerage and all other provisions for an up-to-date, thoroughly equipped hospital.

Decision Against Hospital. A recent decision of the Council of Appeals of the Federal Social Security Board has granted social security for the last three years for workers at Maynard Hospital, Seattle. This decision challenges the use of the word "charity" by hospitals. It also raises the issue of whether hospitals shall be placed on the tax rolls in the communities in which they operate. Appeal from this decision to the courts will determine these questions which, if sustained, will apply to all hospital workers and the tax rolls of all hospitals.

Hospital Fire. On August 6 a fire caused $15,000 damages at St. John's Hospital, Port Townsend. Plans are being made to construct a completely new and larger fourth floor of the hospital.

New Hospital Needed. A request has been made of the Priority Commission to allot funds for a hospital in the Camas-Washougal area. Plans have already been prepared for such a hospital which is very much needed.

Hospital Enlargement Assured. It has been announced that the Director of Federal Works has assured presidential approval of an appropriation of $145,000 for the enlargement of St. Luke's Hospital in Spokane.

Hospitals Closed. The Sweet Hospital at Centralia has been closed because of the inability to secure registered nurses and other hospital workers. The clinic, however, will be continued. The hospital has been in continuous operation since 1918, when it was built by L. A. Scace and originally was known as St. Luke's Hospital. Also the Nugent General Hospital of Centralia has been closed because of difficulty in securing staff members and nurses.

Nurses Home To Be Constructed. A nurses home is to be added to St. Peter's Hospital, Olympia. This is assured by the approval of an appropriation of $124,000 by the Federal Works Agency. Beside construction of the nurses home, there will be alterations in the hospital building providing for 109 additional beds. Demands of the war program have made this addition a vital necessity.

Hospital Enlarged. The Army General Hospital, under construction at Spokane, has been ordered increased in size. Originally begun for 1000 beds, its capacity will be enlarged to 1500 beds.

Health District Formed. The health departments of Jefferson and Clallam counties have united to form a joint public health district unit. This has resulted from conferences of the State Department of Health with officials of these counties and the cities Port Angeles and Port Townsend. The central office will be located at the court house in Port Angeles, with a branch office at Jefferson County court house in Port Townsend. District offices will be located in other sections of the counties.

Tricounty Health Unit. Walla Walla, Franklin and Benton counties have combined into a tricounty health district. J. A. Kahl of Walla Walla will be in charge of the district. H. P. O'Brien will continue as physician of Franklin County and Ralph deBit of Benton County.

Appointed County Physician. W. A. Johnson of Longview has been appointed physician of Cowlitz County, succeeding F. J. Dwyer who has taken a position on the medical staff at the Vancouver shipyard.

Resumes Practice. Lunsford D. Fricks of Seattle, for many years connected with the U. S. Public Health Service, who retired four years ago after forty years of practice, has resumed the practice of medicine and is located at Helena, Montana, where he has been appointed health officer for that city and the surrounding country.

New Locations. Glenn C. Bolton of Deer Park has located in Chewelah. Mary Angland has located for practice in Yakima in connection with her brother, Thomas A. Angland, and Delmar F. Bice; after graduating from University of Oregon Medical School, she served as interne at the county hospital, Wauwatosa, Wis. Dale Garrison has located for practice at Bremerton in connection with Joseph Coyle; he came from Port Townsend, where he had been serving as Jefferson County physician. Robert L. Bailey has located for practice in Sedro-Woolley after recent service on the Northern State Hospital staff.

OBITUARIES

Dr. Harry Gaylord Willard of Tacoma died August 21 aged 67 years. He was born in Grinnell, Iowa, and graduated from the high school and college of that city. After graduating he taught school and coached football for four years. He obtained his medical degree at Rush Medical School, University of Chicago, in 1904. He started practice in northern Michigan, later locating at Three Forks and Deer Lodge, Montana. After studying in Vienna and Berlin, he settled for practice in Tacoma in 1915. During World War I he served in the army, being a major at Base Hospital No. 80 in France. He was active in civic and professional circles, being one of the best known and beloved physicians of Tacoma. He filled many professional and civic offices during his residence in that city.

Dr. Thomas J. Appleton of Seattle died August 22, aged 79 years. He was born in Michigan in 1863. He obtained his medical degree at Chicago Homeopathic Medical College in 1890. He located in Seattle in 1912, and practiced continually until he retired a year and a half ago on account of illness.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

Cowlitz County Medical Society met at a dinner meeting September 16, at Hotel Monticello, Longview. This was the first meeting of the fall season and attendance was almost 100 per cent. Two new members were admitted to membership, Harry Morgan and Roy C. Reis of Longview.

J. F. Christensen of Kelso gave an interesting report of the meeting of the House of Delegates September 12-13 in Seattle. A discussion was held of the ways and means to handle indigent work in this country as the county physician expects to be called to army service in the near future. Several of the members are anticipating a call for army service at any time. Harry Morgan announced he was leaving for Salt Lake City on September 22 to enter the service.

The Auxiliary was entertained at the home of Mrs. J. L. Norris. Mrs. Justin McCarthy was assisting hostess. This was the first regular business meeting of the fall seaon. Mrs. J. L. Norris gave a report of the state board meeting of the medical auxiliary held in Seattle last August. Mrs. L. S. Roach gave a legislative program on Initiative 151.

PIERCE COUNTY MEDICAL SOCIETY

The regular meeting of Pierce County Medical Society was called to order in the auditorium in the Medical Arts Building, Tacoma, September 8, Clyde Magill, President. Minutes of the meetings of May 12 and August 25 were read and approved.

The paper of the evening was given by J. F. Steele on "Bronchogenic Carcinoma of the Lung." He reviewed the present conception of etiology, discussed the increase of incidence and described the various forms of carcinoma of the lung. Symptoms were enumerated and the value of roentgenography and fluoroscopy emphasized. Several excellent lantern slides illustrated the paper.

IDAHO STATE MEDICAL ASSOCIATION

FIFTY-FIRST ANNUAL MEETING, 1943

ADDITIONAL MEMBERS COMMISSIONED

In the August issue of this journal were published the names of the members of the Association who had been commissioned as of date July 25. Here are published the names of those who were commissioned since then as of date September 25:

Beck, W. W., Jr., Blackfoot
Carrsow, J. E., Lewiston
Daines, H. B., Boise
Handford, W. B., Caldwell
Davis, J. W., Glenns Ferry
Hollingsworth, James, Boise
Mangum, J. R., Nampa
Oldham, D. G., Twin Falls
Ross, W. B., Nampa
Smith, R. S., Boise
Springer, D. W., Boise

MEDICAL NOTES

New Hospital Contemplated. It is reported that the Idaho Elks have purchased a residence on Sycamore Drive, about six miles from Boise, where they will erect a hospital for the treatment of crippled children.

Head of Health Unit. Walter McWilliams has been appointed director of Northern Central Idaho Health Unit with his office at Lewiston. He succeeds J. Campbell Kern. Dr. McWilliams is a graduate of the University of Oregon Medical School, and later served as interne in the United States Marine Hospital, Chicago.

Physician at Jap Camp. Lauren M. Neher, recently of San Francisco, has arrived at Jerome and will be stationed at the Japanese Evacuation Camp at Tule Lake, where he will establish hospital facilities. He has also helped to establish the hospital at Gila River Japanese Evacuation Camp, near Phoenix, Arizona.

AMERICAN COLLEGE OF SURGEONS

The 1942 Clinical Congress of the American College of Surgeons, originally scheduled for October at the Stevens Hotel, Chicago, which was taken over August 1 by the United States Army Air Corps, will be held in Cleveland, with headquarters at the Cleveland Public Auditorium, from November 17 to 20, according to an announcement from the College headquarters in Chicago. The twenty-fifth annual Hospital Standardization Conference sponsored by the college will be held simultaneously.

The program of panel discussions, clinical conferences, scientific sessions, hospital meetings and medical motion picture exhibitions at headquarters and operative clinics and demonstrations in the local hospitals and Western Reserve University School of Medicine, has been centered around the many medical and surgical problems arising out of the prosecution of an all-out effort to win the war, emphasizing the needs of the rapidly expanding medical services of the Army and the Navy, and consideration of special problems related to the increasing activities for civilian defense.

The Forum on Fundamental Surgical Problems inaugurated at the 1941 Clinical Congress will be repeated to give the younger men, representing various university departments of surgery, an opportunity to present the important results of their clinical and experimental research work before a large surgical meeting. Heretofore these young men have seldom been able to present their original work and ideas, since many of them have not yet qualified for membership in the principal surgical societies. The forum will be held on three successive mornings.

CORRESPONDENCE

A LAYMAN'S ANALYSIS OF MULTIPLE SCLEROSIS

It is not customary in a medical journal to publish a layman's discussion of medical problems. The accompanying communication presents such a clear analysis by the patient of the symptoms and progress of his disease that it seems of sufficient interest to warrant publication—Editor.

Olympia, Wash., September 8, 1942

My research in connection with my disease has failed to disclose any optimistic prognosis and indeed all medical works indicate it to be a fatally progressive malady. But medicine is not an exact science and its historic development shows a cautious acceptance of new theories put forward by the few real pioneers in any field.

My first symptoms of nerve degeneration and vague sensory disorders appeared in 1936. In the following five years the well known symptoms of multiple sclerosis made their appearance one after another and several relapses and remissions occurred, but no definite diagnosis was given except by one doctor who pronounced, after extensive examination in 1938, that no pathologic difficulty was evident, and therefore the condition must be neurologic. A more serious exacerbation occurred in June 1941 and was speedily diagnosed by a leading neurologist and neurosurgeon. I was treated at the Marine Hospital and later the Veterans' Hospital at Walla Walla.

A patient with a flair for medical inquiry is generally given little encouragement by the medical profession. Doctors in diagnostic conference in a patient's presence consistently talk over his head. In my case this caused an intense desire for knowledge. By constant inquiry and insistence upon additional understanding, all available books on nervous diseases and nerve pathology were carefully studied during the month of incapacity, while awaiting a remission. Treatment at that time consisted of pyrexia by strep injections.

Through reading medical books and spending many hours of questioning and discussion with other multiple sclerotic patients, I came to question the accepted theory that the sclerotic placques were caused by a virus, being unable to find any positive evidence to support this theory.

One sentence in Marcovitz' article in Davis' encyclopedia caught my attention: "The criterion of success of treatment is not the induction of remissions, but the prevention of relapses." Not one book studied mentioned any surgical treatment for multiple sclerosis, and yet as months passed, following the last remission and return to normal activity, I heard reports of a surgical operation having been performed in some cases.

Any patient faced with such a discouraging prognosis as multiple sclerosis has presented can hardly face the accepted medical theories with equanimity, and especially a person, who has seen the degeneration of the disease in a ward of a Veterans' Hospital surrounded by patients in all stages, must exhaust all possibilities before resigning himself to a slow degenerative death.

The rejection of the virus theory is very necessary to constructive research. Many different forms of therapy have been tried, and a lay person may notice that the recuperative processes generally run their course irrespective of treatment, aside from attention to general hygiene. For years I had noted cold hands and feet, together with "pins and needles" feeling and lack of sensitivity to touch. Having poor circulation in the extremities, but with normal blood pressure and normal blood count, it was logical to think of lack of normal blood supply in the cord as the cause of sclerotic placques. One person consulted described the attempts by an osteopath to stimulate circulation in the cord. This seemed an advance from local massage that I had received in hospital physiotherapy treatments.

The need for further treatment was brought to a crisis in March, 1942, by an attack of serious incoordination in balance and a slight speech disturbance, together with difficulty in swallowing. It was apparent that the progression had reached the nerve centers in the upper cord and brain stem. Immediately I consulted the neurosurgeon who had made the diagnosis the previous year, and requested that a sympathectomy be performed. I was advised that this was an elective operation, since results were questionable.

This operation used the anterior approach and removed the inferior cervical and the first three thoracic ganglia on each side, and is termed a bilateral, cervicodorsal, sympathetic ganlionectomy. Such an operation produces a permanent increase in the blood supply of the brain and upper spinal cord. The sympathetic denervation causes vasodilatation of the blood vessels supplied by the denervated segments. In fairly early stages, where the sclerotic placques have not become large or numerous, the improved vascularity of the viable but nonfunctioning nerve cells causes them to resume their activity under favorable conditions. This is borne out by the fact that during ordinary remissions various cells do regain their function for certain periods, and the theory of the sympathectomy for multiple sclerosis is based on the above premise.

Two months after the operation I had a relapse which lasted for only two days, whereas previous relapses had lasted for from one to three months. For the next few months recovery was slow but continuous. At the time of the last examination there was shown to be a negative Romberg and a negative Babinski. Previous evidences of spasticity and disordered abdominal reflexes disappeared. Normal sensitivity of touch in the fingers returned, ankle clonus disappeared and vesical difficulty was improved. It is felt that the prognosis is very favorable.

Surgical treatment should not be expected to produce favorable results in advanced cases, particularly where patients are no longer able to walk. Selected cases should include consideration of the patient's psychologic adjustment. There must be no acceptance of disability in the patient's outlook. My contact with multiple sclerosis cases in the Veterans' Hospital, as well as elsewhere, shows the importance of having an optimistic attitude and the need to keep as active as possible.

No general conclusions should be drawn from the results of one case, but surgical treatment of multiple sclerosis has now been tried over a number of years in a sufficient number of cases by several neurosurgeons with sufficiently good results to warrant its acceptance as a method of treatment. The operation, by improving the blood supply to the brain and spinal cord, will result in at least checking the progress of the disease or even improving the symptoms. It is hoped that the medical profession will more generally use this method of treatment rather than allow patients to lapse toward complete disability.

Frank L. Curtis.

CLINICAL FORUM

OBSTETRIC PROBLEM

When called in consultation on a case such as outlined below what would be your advice and suggestions? Or, if it had been referred to you for your own conduct in the hospital, the attending physician living in another town, how would you continue the case? The findings are as follows:

Mrs. A. E. J., age 42, para—0, gravida—II. She is at term. At twelve o'clock noon on May 12, 1941, labor began at home with regular pains. Thirteen hours later, at 1 a.m., her family physician examined her and ruptured her bag of membranes. Unfortunately the cord prolapsed through the cervix. This, however, he was able to replace. She is admitted to the hospital some sixteen hours later, about 4 p.m. on May 13. You learn that during the preceding December she had had some elevation of blood pressure but she does not state how much, and during April albumin had appeared in her urine.

External examination shows the head to be floating. Her exterior pelvic measurements are normal. Her blood pressure is 180/110, and temperature 100.6°. Vaginal examination reveals the cervix is thick and 1 cm. dilated. A little over an hour later the patient has a chill and her temperature rises to 102°. An hour following the chill another vaginal examination is made which discloses the head to be at station minus one. The cervix is still thick but 3 cm. dilated. The next morning, May 14, at 2 a.m., or 8 hours after the last vaginal examination, the patient seems exhausted. Her temperature is still 102°. The fetal heart beat is 150. You order morphine for rest. Definite plans for delivery are unpleasantly looming in the near future.

COMMENTS ON PEDIATRIC PROBLEM OF SEPTEMBER ISSUE

The commentator holds these views: Although the dates in this case rather plainly signified that the expected arrival of this child was at hand, the weight of the baby seems to imply that there must have been a mistake somewhere in the estimation of delivery date. Measuring the distance between the symphysis and the upper margin of the fundus would quite clearly reveal that a small baby was present and that it would not be necessary to induce labor. A 5 lb. baby would extend only about 28 or 29 cm. above the symphysis. Then, having determined that the child was small, there would me no hurry whatever for induction, but rather a good policy would be to wait until either labor set in normally or until the child seemed to be assuming proportions so large that it would be necessary to hasten the birth. Waiting this way would also not be hazardous because of the fact that the mother was a para-IV and, therefore, presumably possessing an ample pelvis.

It would be interesting to learn whether this delivery was done quickly or rather slowly and deliberately. The head of a breech delivery in a small baby when done very quickly might result in a tear of the tentorium. In that case resuscitation would almost surely be necessary and subsequently a feeding problem would present itself.

I note that carbogen was used in resuscitating the baby. At the American Congress of Obstetricians held in St. Louis last April, the point was repeatedly brought out that pure oxygen is by far preferable to carbogen. These babies are already cyanotic. They are overloaded with carbon dioxide; consequently, pure oxygen is pointedly indicated. My diagnosis here would be that the child had a meningeal tear with hemorrhage (a spinal puncture might corroborate the decision), and that no treatment whatever would be of avail.

In view of the fact that this baby when born was so small, it makes one feel inclined to censure the physician for inducing labor. Since the date of her last menstruation was June 1, and, therefore more or less definitely March 8 would be the correctly anticipated date of delivery, one would expect a baby weighing seven pounds or above.

The obstetrician may have been perfectly justified in following the procedure he did. It is a well known fact that occasionally a poor sperm fertilizes a good ovum or a good ovum is fertilized by a poor sperm. If that should have been the case in this instance, a small baby with anomalies either apparent or occult might be present or would be present at the time of birth. Under such circumstances, the history of the child's earliest moments of life would be exactly as recorded and from that time on he would be a problem not only in breathing but also in eating.

There are more or less degrees of anomalies affecting profoundly the progress and finally the life of such a child. As pediatricians we frequently see children who have no outlook whatever in adjusting themselves to the normal requirements of either society or plain living. As they grow older they become burdens to themselves and to the community at large, with no hope whatever of any remedy. Their start was an anomaly, their birth was hazardous, and their subsequent life a disaster. There is no one to blame. It is just one of the unfortunate accidents of circumstance. This child may be an example of exactly what occurred when either a bad sperm or poor ovum exerted itself to the utmost for normalcy and failed utterly. Therefore, in that light, this was wholly a normal outcome.

Conclusions of the Case. Diagnosis on the death certificate was "hemorrhagic disease of the new born." Autopsy findings were "visceral hemorrhage" (where, not stated—ed.). Pneumonia (where, not stated), atelectasis, gastric ulcers. Cranium was not opened.

BOOK REVIEWS

Clinical Anesthesia. A Manual of Clinical Anesthesiology. By John S. Lundy, B.A., M.D., Head of Section on Anesthesia, Mayo Clinic, etc. With 266 Illustrations. 771 pp. $9. W. B. Saunders Company, Philadelphia and London, 1942.

Older physicians began practice with anesthesia confined to chloroform or ether, with more confidence placed in the latter. It is a wide extension of anesthetic agents from those days to the present, when the anesthetist has the choice of methods and agencies unknown a generation or two ago. This volume presents the most through and complete consideration of the subject of anesthesia which has yet been offered to the medical profession. The agency employed for the production of anesthesia in a given case is an index of the anesthetist's skill and judgment. The first chapter deals extensively with this aspect of the subject which every anesthetist might study with profit. Local anesthesia introduced new surgical painless possibilities, the wide explanation of which is here presented in detail.

Spinal rectal and intravenous anesthesia offer advantages in certain conditions which promote the safety and success of surgery beyond the dreams of the early surgeons. All phases of these different methods are discussed elaborately in this volume. Apparently no possible application of anesthesia has been overlooked. The wealth of illustrations amplifies the text so that the anesthetist who consults it will not fail to employ the method likely to best promote the welfare of the patient and success of the surgeon's effort. Not only are useful and necessary methods presented for the surgeon, but instruction is also offered for assistants and nurses, whose services are essential for successful surgery. This volume cannot be too highly commended to every one seeking information on the important subject of anesthesia. Every surgeon should have it available for his own guidance and assistance in his work.

Preventive Medicine in Modern Practice. Edited Under the Auspices of The Committee of Public Health Relations of the New York Academy of Medicine. By James Alexander Miller, Chairman; George Baehr, Former Chairman; E. H. L. Corwin, Executive Secretary. 851 pp. $10. Paul B. Hoeber, Inc. Medical Book Department of Harper & Brothers, New York, 1942.

This book is a compiliation of monographs on practical timely subjects which are close to every practitioner's needs, contributed by fifty writers. The singleness of the human mind leads us into the erronious habit of riding our own patterns too intensively, and this excellent volume by nationally known experts in various fields serves as a means of reshaping oneself with modern interpretations, some of which are the following:

The comprehensive, astute, intensive and kindly mind of Haven Emerson leads the way with a monograph on the Prevalence of Disease. In this he has three interesting chapters acknowledging new comers in the field of etiology of disease which are nutritional disease, dietary drugs and allergic manifestations. James A. Miller out of his life work in tuberculosis, consisting of thousands of contacts, easily and efficiently presents the great cornerstones upon which the principles responsible for the hope of eradication of this disease are based.

Harold N. Cole with characteristic terseness waste no words in presenting the cruel facts of syphilis. This ardent clinician has pointed the way of recognition which has served as a guide to many a student of dermatology. R. J. Woodyatt in a genial and generous mood contributes his chapter on diabetes mellitus.

In the chapter on nutritious and the deficiency diseases, Norman Jolliffe speaks of a new field in preventive medicine. This chapter glistens with hope. New anatomic lesions, "cheilosis, fissures in the angles of the mouth, filiform dermatosis in the nasolabial folds, and invasion of the cornea by capillary blood vessels, all due to nutritional failure related to deficiency of riboflavin." Herein lies opportunity for those who can visualize, and new mechanisms for those who may be confronted with confusing clinical entities. This volume offers a most constructive and extensive evaluation of the available medical information of today.

C. H. Hofrichter

The Surgery of Pancreatic Tumors By Alexander Brunschwag, M.S., M.D., F.A.C.S., Professor of Surgery, University of Chicago. With 23 illustrations and one color plate. 421 pp. 7.50. The C. V. Mosby Co., St. Louis, 1942.

The average medical man may be surprised to find out how much work has been done on tumors of the pancreas. Surgery has been performed on pancreatic cysts both the true and the false, for tumors of the papilla of Vater both benign and malignant, for carcinoma of the head, body and tail of pancreas. Surgery has been done for hyperinsulinism and there are standard procedures for both tumors of the islet cells and hyperplasia of the cells. Sarcoma of the pancreas has been treated by surgery. Also it has been operated upon as part of an operation for carcinoma of other organs, notably the stomach.

This book is a complete monograph of the subject, bringing up to date all information that can be had in the medical literature. The physiology, anatomy and various procedures have been outlined in detail. Preoperative and postoperative care is also taken up in detail as well as irradiation treatment where it is necessary. There is also a chapter on the complications of operation on the pancreas.

It is interesting to note that some of the successful operations on the pancreas go back to the last century. The author states, "it deals with relatively few facts in a newly developing field," and he hopes that it will stimulate further work in this field.

This book is an epic on the subject on which it is written and should be of the greatest help to anybody doing major abdominal surgery.

David Metheny.

The Pharmacopoeia of the United States. (The United States Pharmcopoeia). Twelfth Revision (U. S. P. XII). By authority of the United States Pharmacopoeial Convention. Prepared by the Committee of Revision and Published by the Board of Trustees. Official from November 1, 1942. 880 pp. $7.50. Mack Printing Company, Easton, Pa., 1942.

The first issue of this authoritative publication appeared in 1820. There has been a revision published every ten years since that time. It is announced that hereafter a revision will appear every five years, with a "Supplement" halfway between and "Interim Revision Announcements" whenever required. This volume contains descriptions of 659 medicinal productsfi of which 160 are new drugs and medicinal preparations.

Medical authorities have selected for this revision what they believe to be the most important medicinal substances known to the medical world. Pharmacopoeia standards are recognized by federal and state acts as the basis for law enforcement. Every physician realizes the vital importance of accurate writing of prescriptions. This is the acme of medical practice. While the ordinary physician cannot be an expert in combining drugs, nor be familiar with the composition and preparation of all of them, he can amplify this knowledge by consulting this pharmacopoeia with the assurance that knowledge obtained from it is authoritative.

The Function of the Orgasm. Sex-Economic Problems of Biological Energy. By Wilhelm Reich. Translated from the German Manuscript by Theodore P. Wolfe. 368 pp. $3. Orgone Institute Press, New York, 1942.

This book is not recommended for the general practitioner because of the extreme technical nature of the material covered. It stresses sexuality and social phases as the prime factors in production of both neurosis and psychoneurosis and it uses many new terms that even to the well trained psychiatrist will cause some bewilderment. Some of these are: "sex-economy," "vegetotherapy," "vegetative current," "character armor."

The author attempts to place most of our mental reactions on the psychologic basis, thus to do away with the former dual concept of the mind and body. His complete emphasis on sex will, of course, make many wonder as they did when Freud came out with his revolutionary theories. The author is more sweeping and definite in his sex concepts than Freud. While there is much in the book to commend it, it leaves one wondering and questioning particularly in the methods of treatment.

Many of the author's conclusions lack complete proof and are really only those of one man in this particular field. He believes the neurosis is but one thing, the sum total of all the inhibitions of the natural sexual pleasure which in the course of time have become mechanical. The psychic conflict between sexuality and morality works in the biologic depths of the orgasm as a conflict between pleasurable excitation and muscular spasm. He has worked out to his own satisfaction the bioelectric nature of orgasm and states that the potential at the erogenous zones does not increase unless there is a pleasurable feeling of current at the respective zones.

His answer to world problems states that fascism has put before us in unmistakable form the fact that the vital functions of the human have become thoroughly neurotic. What is necessary is work on the human structure, on a broad basis and with the protection of society; work on this structure which produces the psychic plague, which makes it possible for psychopaths to function as dictators and modern "sex reformers." In one word, what is necessary is the liberation of natural sexuality in the masses of people and its underwriting by society. N. K. Rickles.

The 1942 Year Book of Physical Therapy. Edited by Richard Kovacs, M.D., Professor and Director of Physical Therapy, New York Polyclinic Medical School and Hospital, etc. 416 pp., $3.00. The Year Book Publishers, Inc., Chicago, 1942.

Every physician who employs physical therapy should have access to a book containing the latest features of this line of practice such as presented in this volume. One should be versed in the principles upon which physical therapy is based. Nearly half of this volume is devoted to exposition of these principles under Physical Therapy Methods. The remainder of the book deals with applied physical therapy, with detailed descriptions of many forms of application.

Tuberculosis Hospital and Sanatorium Directory. A Directory of Sanatoria, Preventoria and General Hospitals having Departments for Tuberculosis Patients, 185 pp. $1.50. National Tuberculosis Association, New York, 1942.

In continental United States there are 97,726 beds for treatment of tuberculosis patients. This volume presents a directory of all the hospitals and sanatoria which care for these patients. It also included tuberculosis institutions in fourteen outlying territories and possessions with 3,319 beds. For each listed institution are presented data concerning capacity, rates, diagnostic and treatment facilities. Anyone engaged in this line of work can obtain much useful information from perusing this book.

Medical Progress Annual. Vol. III, 1942. A Series of Fifty-two Reports on The Recent Accepted Advances in Diagnosis and Treatment, Published during 1941 in The New England Journal of Medicine. Managing Editor, Robert M. Nye, M.D. 678 pp., $5.00. Charles C. Thomas, Springfield, Ill., 1942.

Each of the fifty-two chapters in this volume deals with a single subject unrelated to others. The authors are nearly all connected with Harvard University, a few being related to other Boston institutions. Consequently, every subject presented can be received as dependable. They deal with medical, surgical, obstetric and neurologic subjects, as well as pathologic, pharmacologic and pediatric conditions. Taken at random, here are a few topics presented: allergy, arteritis, diabetes mellitus, dental caries, endoscopy, radiation therapy in gynecology, treatment of meningitis, artificial feeding of infants, plasma proteins in health and disease, surgical shock, thoracic surgery, war medicine. Each paper is followed by a bibliography, some being quite extensive. For instance, "Encephalitides of Virus Etiology" covers twelve pages, with 186 references included in eight pages. This indicates that every paper is based upon authoritative data.

Synopsis of Pathology. By W. A. D. Anderson, M.A., M.D., Assistant Professor of Pathology, St. Louis University School of Medicine, etc. With 294 Text Illustrations and 17 Color Plates. 661 pp., $6.00. The C. V. Mosby Company, St. Louis, 1942.

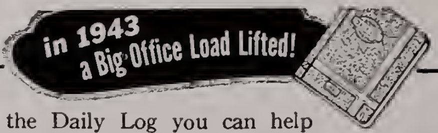
It is stated that this volume is intended to fill a gap between elementary manuals of pathology and the larger text books and reference works. That purpose is thoroughly demonstrated. It should be useful not only to the medical student, but to the clinician who desires to maintain familiarity with the foundation sciences of medical practice. One cannot hope to retain knowledge of all the technical details of pathology, but he should be familiar with its general principles as presented in this volume. One of its most attractive features is presented in the profusion of illustrations. These are not offered in small sections, but published with sufficient elaboration to illustrate clearly the subject under consideration. Anyone will find this an instructive volume as a refresher on pathology.

Clinics. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania. 264 pp., $3.00. J. B. Lippincott Company, Philadelphia, 1942.

This is the first number of the first volume of a new series of reports, succeeding The New International Clinics which have been published for a number of years. In this volume are seventeen papers by twenty-nine contributors. The prominent feature is the symposium on burns and shock, with papers by six contributors offering a thorough discussion of these subjects. The clinical reports deal with a variety of subjects, including prepubertal vulvovaginitis and rupture of the uterus near, at or past term. There is a discussion of auricular flutter and tuberculous pericarditis and other subjects of interest.

ERRATUM

In the September issue of this journal a review was published by Physical Chemistry for Students of Biochemistry and Medicine by Edward S. West, The Macmillan Company, New York. It was incorrectly stated that the price is $8.75. It should have been $5.75.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The DAILY LOG

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

HOW TO VOLUNTEER

Much emphasis is being constantly stressed on the necessity of enlisting more doctors for army service. The increasing size of the army demands a corresponding increase in medical officers. It is asserted that by the end of 1942 there will be 20 per cent of United States doctors in war service and a year later the increase will be to 30 per cent. Those already in service are the ones who will be promoted, while doctors volunteering at the present time must of necessity receive lower grading. Older physicians are requested to urge younger men to enlist. The only official method of enlisting is through regular forms provided by the War Department. In order to elucidate procedures for enlistment the following regulations are presented from the office of the Surgeon General, United States Army, Washington, D. C.

From correspondence received in the Office of the Surgeon General, it is apparent that many unanswered questions should be explained. To help clear this maze of doubt, a few questions will be answered and clarified in the following paragraphs:

First, have you volunteered? Only if the following conditions have been fulfilled:

1. If you have filled out application blanks at a medical officers recruiting board and have had a final type physical examination at an army installation.
2. If you have filled out these blanks and sent them to the Office of the Surgeon General, with the report of your physical examination.
3. If you are already in the service.

A personal letter written to the Surgeon General applying for duty is not sufficient; neither is the completion and return of questionnaires such as those distributed by the Procurement and Assignment Service of the War Manpower Commission sufficient. You must apply on regular War Department forms to the Surgeon General directly or through the medical officers recruiting board before you have volunteered your services. The latter is preferable (application through the medical officers recruiting board), for it allows completion of the essential more rapidly than can otherwise be accomplished. So, contact your board. Physicians who are designated by the Procurement and Assignment Service as "essential" for civilian medical services cannot be commissioned and should not initiate applications for commissions.

ASSIGNMENT TO SPECIAL SERVICES

What kind of work will you do?

A sincere effort is being made by this office to place men in the same type of work for which they received training in their civilian medical practice. The papers of every officer appointed are examined carefully before assignments are made. Those individuals who have had special training in any field of medicine can best serve their country doing that work. We are hoping not to have ophthalmologists doing amputations of extremities. We do not wish to have general surgeons as chiefs of radiology departments. It will be impossible to classify every individual properly, but at the present time the vast majority of men are being placed as their training indicates, by automatic processes in the Surgeon General's office. Therefore you, if a specialist, can be assured that every effort will be made to continue you in an assignment in keeping with your training and experience. This will keep the level of military medicine on a high plane and at the same time further the education of the individual concerned and increase the standards of medical care for the soldiers in the front lines.

Some Dont's

To help the Surgeon General, please observe the following:

1. Do not come to Washington to talk to officers engaged in this work. Your presence slows the call to active duty of many men.
2. Do not try to influence this office by the writing of letters to influential individuals in other government services. Their time is already engaged in functions essential to successful completion of our war effort.
3. Do not send in duplicate applications. This results in much confusion in all War Department offices concerned in the calling to duty of qualified physicians.
4. Do not write for information unless it is absolutely essential and of an emergency nature. Many letters are answered daily which, on proper consideration, should never have been written; or the answers could have been given by medical officers recruiting boards.
5. The action of the grading committee appointed in this office in determining the initial grade must be final. The decision is reached only after careful consideration of many factors which must be taken into account and cannot possibly be understood by one not in the military service.

It has been requested that special attention be called to the "don'ts" included in these instructions.

OUR MEMBERS IN WAR SERVICE

The most vivid evidence of the engagement in the World War of the medical profession is the absence from our ranks of men who have been commissioned and have departed from their usual field of activity to be absent during the duration of the war. In every city, whether large or small, this impressive proof of our participation in the great war effort is always before us. In proportion to our population and the numbers of physicians in our respective states, the response from our three Northwestern states to the call for enlistments will compare well with that of other sections of the country. We have been informed that the medical professions of all of these states have exceeded the enlistment quotas assigned to them.

To date of November 1 the record shows 307 enlistments from the medical profession of the state of Oregon, including those in Army and Navy. The Washington record numbers 409 commissions in Army and Navy service. From the state of Idaho have been commissioned 67 medical men for the two branches of service. The names of all these commissioned men have been listed in the August, October and November issues of this journal. Future enlistments will be published in following issues. If the war continues as anticipated by some commentators, there will be a further demand upon the physicians of our states, in response to which our men can be depended upon to do their share as they have done in the past.

RETIRED DOCTORS RESUME PRACTICE

For a number of years there have been varied expressions of opinion as to the age at which industrial workers and professional men should retire into lives of inactivity. This retirement is commonly assigned to one of two reasons, either deterioration of physical and mental powers, or for the purpose of making way for the next generation. A large proportion of industries look askance at a worker who has passed the fourth decade. Hospital visiting staffs and medical school faculties commonly have a hard and fast custom of making sixty-five the deadline for activities of their personnel, in spite of the fact that many of these doctors may at that time be at the peak of their attainments and usefulness. This rule seems inevitable, however, in order to give the next generation an opportunity to function in these same lines of activities. History is replete with examples of men and women in the seventies and eighties who have produced outstanding accomplishments in literature, art and science, demonstrating that age is not of itself a bar to supreme attainments.

The urgencies of this world war have made such stupendous demands upon those engaged in industrial occupations and the professions that the inherent abilities of older citizens have become outstanding. For instance, a proprietor of a hotel contemplated closing his doors on account of inability to obtain workers. He developed a bright idea. A want advertisement stated that no one under fifty years of age need apply. He was overwhelmed with applications and was able to select a force of helpers superior in ability and willingness over those in the past, although slower in action and perhaps less attractive in personal appearance. The secretary of a medical society has called attention to the membership roll, with a number of practitioners in the seventies and early eighties now once more engaged in active practice. If the existing drain on the medical profession for war service continues, there will be further demand for these oldsters who have hitherto been considered inacapacitated and useless for medical practice. Doubtless some of these older practitioners will develop renewed energy and professional acumen under the necessity of once more exercising the accumulated knowledge of years which had begun to lie dormant. It is well known that exercise in any line of activity develops latent powers, whether in physical or mental functions.

THE INDUSTRIAL PHYSICIAN

The extension and expansion of industry in recent years, particularly in the present war era, have introduced features in the practice of medicine with which the average practitioner is unfamiliar. Morbidity in industries has been greatly decreased in recent years through the introduction of measures limiting injuries to legs, arms, eyes and other parts of the body, with attention to inhalation of dusts, gases and the like. In addition to these hazards there have been added new ones by reason of new procedures with new processes of production. It is claimed that a new hazard has arisen from new uses of metals, such as lead, zinc, antimony, magnesium and others. Accordingly industrial medicine has become a specialty for which special training is needed.

Blake[1], of Yale University School of Medicine, has announced a graduate course designed for the instruction of physicians in industrial health and medicine in war time. This course will be held weekly from October through December. It is asserted that "the growing importance of the field of industrial hygiene and industrial medicine has been evident in the country in general, and particularly in the industrial state of Connecticut. The demands for industrial physicians will increase, and the type of service that they will be asked to perform will be more exacting during the next few years." After the termination of World War II, there will undoubtedly be a continuation of some of the great industrial developments inspired by the war and the field for the industrial physician will probably become permanent.

A careful survey has reported that sickness and accidents among industrial workers cost the loss of 234,000,000 man days of work a year. Assuming 300 workdays per man a year, this means that more than 700,000 industrial workers are incapacitated on a given day. It is estimated that half of this loss could be eliminated by preventive measures and adequate medical care. These facts are adequate evidence of the future demands and opportunities for the industrial physician.

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[1] Blake, F. G., Dean Yale University School of Medicine. Yale Alumni Magazine, 6:3, Oct., 1942.

DECREASE OF SUICIDES

An interesting phenomenon associated with war is the decrease in suicides noted by observers in this and other countries. Interesting figures on this subject have been published by Metropolitan Life Insurance Company[1] obtained from their official records. These cover the period from World War I to the war now being waged. Between 1915 and 1920 the decline was more than fifty per cent. This low level continued after the war, even during the economic depression in the 1930's. It is stated that for 1941 the rate was markedly less than for the preceding year.

In England the suicide rate decreased from year to year between 1939 and 1941 by approximately fifteen per cent. Likewise in Germany it is stated there was a fall of eighty per cent in the suicide rate from 1939 to 1941. It is stated this lower rate of suicide is so marked that lists of instances could be lengthened considerably.

The explanation of this reduction in suicides is based on the psychologic effects of war. The introspective individual becomes occupied with new interests. Needs of the country become paramount, and certain persons with a lack of purpose for living become absorbed in the defense of the country. Also, the demands for universal employment and the consequent increase of incomes constitute an additional inspiring factor. Future observation will determine how permanent this suicide decrease becomes, following the termination of this war.

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[1] Statistical Bulletin, Metropolitan Life Insurance Co., 23:1-2, Sept., 1942.

CLINICAL CONGRESS CANCELLED

The annual clinical congress of American College of Surgeons, originally scheduled for October at Stevens Hotel, Chicago, and later changed to the Cleveland public auditorium in Cleveland, for November 17-20, has been cancelled by the Board of Regents of the College. This is due to present conditions surrounding the general war program which has placed a great burden on members of the surgical profession. It recognizes the desire of the profession to do nothiug which would interfere with the successful prosecution of the war program.

AMERICAN BOARD OF OPHTHALMOLOGY

Because of the War Emergency, the Board announces additional examinations will be held in Los Angeles January 15 and 16. At the last meeting it was decided to cancel the 1943 written examination, to include in the oral examination all of the subjects previously covered by the written examination and to temporarily dispense with the requirement of case reports. The oral examination will probably require two or three days.

Formal application on the proper blanks for the January examinatiton must be filed with the Secretary not later than November 1. Write at once for blanks to American Board of Ophthalmology, 6830 Waterman Avenue, St. Louis, Mo.

ORIGINAL ARTICLES

ROENTGEN DIAGNOSIS OF OBSTRUCTING BRONCHIAL LESIONS*

George W. Holmes, M.D.
BOSTON, MASS.

Perhaps the greatset advance in roentgenography of the chest during recent years has been made in that division of examinations which has to do with the bronchial tree. This advance is due in part to improvement in roentgen equipment, particularly the introduction of the rotating target tube; and to a somewhat greater extent to the remarkable advances being made in thoracic surgery.

Many pulmonary lesions which a few years ago were considered incurable are now successfully treated by surgery. The first evidence that a lesion of this sort is present is often obtained from the roentgen examination. This is especially true, when the lesion is in an early stage and most amenable to surgery. The correct interpretation of the roentgen finding has, therefore, become a matter of major importance in the management of these cases. Furthermore, since surgical removal may be attempted, knowledge of the exact location and extent of the disease in essential. Recognition of the importance of these data has led roentgenologists, particularly those working in large surgical clinics, to give this subject considerable study during recent years, and it is my intention to present for your consideration some of the results of these studies as they relate to obstructing lesions of the bronchi.

Before taking up the discussion of the clinical and roentgenologic findings it is necessary briefly to review the anatomy and physiology of the lungs as they relate to the problems as demonstrated on the fluoroscopic screen or roentgen films. It is well to remember that, in addition to the usual lobes, there are several anatomic variations, the most common of which is the azygos lobe, appearing at the apex of the right lung, and a small accessory lobe which appears in the angle between the heart and diaphragm, usually on the right side. Anatomic variations in the bronchi are rare. Variations in the vascular system of the thorax rarely affect to any extent the pulmonary vessels.

The physiology of the lungs as it affects our problem is largely a matter of air flow. Conditions bringing about a change in the rate or extent of air flow may be due to changes in the chest wall, the position or movement of the diaphragm, disease of the lungs or bronchi, and inhibitions due to pain. These changes are made manifest to the observer by such phenomena as limitation of, or irregularities in the movement of the diaphragm, failure of the chest to expand and varying degrees of brilliancy of the lung fields, all of which can be demonstrated readily at a properly conducted roentgen examination.

Such an examination should consist of fluoroscopic observation with the patient in the upright position if possible, of films taken at full inspiration and full expiration with the film in front and the tube behind the patient. It is desirable to have a relatively long target film distance, preferably five feet at least. Excellent lateral views are now easily obtained, and they are of the greatest value in determining the location of pulmonary lesions. Some lesions can be demonstrated on these films which are not visible in the anteroposterior view. I refer to those areas which are normally hidden below the diaphragm and to lesions which are of paperlike thinness and are seen only when viewed edgewise.

In cases in which the lesion is extensive it is also necessary to take films using the bucky diaphragm so that details of these dense areas may be brought out. Films taken with the bucky diaphragm are usually sufficient to demonstrate cavities and the outline of air-filled bronchi, but in some instances the use of the planograph is necessary. Stereoscopic films are of value, but they cannot be used to replace films taken at expiration or the lateral view.

Patients suffering from some form of bronchial obstruction usually give a history of cough, pain in the chest and not infrequently of blood spitting or even frank hemorrhage. The physical signs are a unilateral wheeze with diminished breath sounds over the involved area. When the obstruction is complete, the wheeze disappears and the breath sounds are absent. With the exception of the unilateral wheeze none of these findings is characteristic of bronchial obstruction.

The roentgenologic findings may be divided into direct and indirect signs. Direct information of bronchial obstruction is obtained when an opaque foreign body can be seen on the roentgen film, or by visualization of the bronchus and the demonstration of a narrowing or constriction. Visualization of the bronchus usually requires films taken with the bucky diaphragm, the planograph or after introduction of lipiodol. The indirect signs have to do with the demonstration of obstruction to the air flow either into or out of the involved portion of the lung. The earliest indirect sign is that of air trapping, seen on the film as a localized area of diminished density just distal to the obstructed area, and is best demonstrated on films taken at the phase of expiration (fig. 1).

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*From the Department of Radiology, Massachusetts General Hospital, Boston.

*Read before the Sommer Memorial Lecture Course, University of Oregon Medical School, Portland, Ore., March 23-25, 1942.

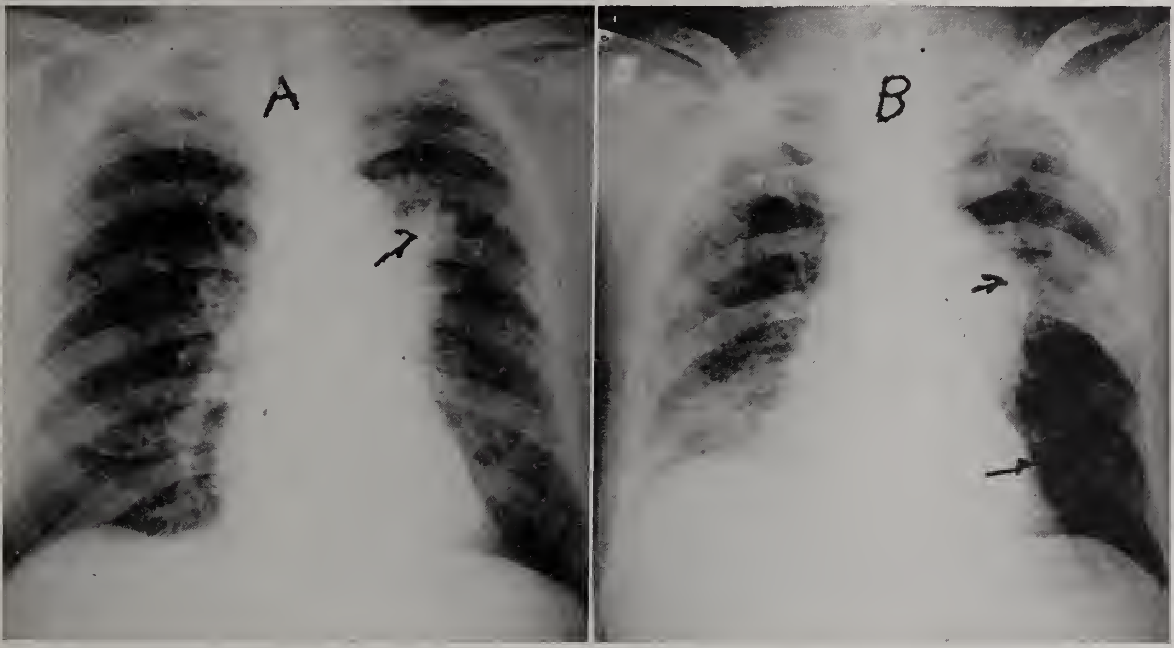

Fig. 1. A, taken at full inspiration, shows a tumor mass at the root of the left lung.
B, taken at full expiration, shows emphysema of the left lower lobe due to ball-valve obstruction of the left lower lobe bronchus. The true condition is not shown on the film taken at inspiration.

If the obstruction is in a major bronchus, limitation of the expiratory movements of the diaphragm may be present, and there may be a mediastinal shift away from the affected side. As the lesion progresses, obstruction of air flow into as well as out of the involved lung takes place. When this phase of the process has developed, the area supplied by the diseased bronchus becomes less radiant than the surrounding lung and may become airless. The area now appears on the film as one of increased density and is best demonstrated in the lateral view. As the obstruction increases there is a partial collapse of the involved lung and the mediastinal shift is toward the lesion.

Not infrequently infection takes place distal to the plug, and consolidation occurs in the area of lung supplied by the affected bronchus. The distal bronchi may become dilated and single or multiple abscesses may occur. At this stage of the disease correct interpretation from the roentgen examination is very difficult unless direct evidence of the bronchial lesion can be demonstrated.

Probably the most common cause of bronchial obstruction in an adult is tuberculosis. In these cases the obstruction is brought about in three ways: first, direct pressure of enlarged bronchial glands on the bronchus; second, breaking down of a gland in contact with a bronchus with ulceration and discharge of the infected material into the bronchus; and, third, tuberculous ulcerations within the bronchi. While it is not always possible to determine the nature of the process from the roentgen examination alone, it may be suspected from the presence of enlarged, sometimes calcified, glands in the region of the suspected bronchus, or from the presence of lesions suggesting tuberculosis elsewhere in the lungs. In those cases where the lesion is confined to the bronchial mucosa a correct diagnosis from the roentgen findings is impossible. These cases constitute a considerable portion of those patients showing tubercle bacilli in the sputum, in whom the roentgen examination of the chest is said to be negative. Films taken at expiration should demonstrate air trapping in most of these cases.

Nontuberculous infections, particularly those of the influenza group, may also cause bronchial erosion with evidence at the roentgen examination of bronchial obstruction. In most of these cases the obstruction is temporary and the lesions clear up rapidly. There are no other characteristic findings.

Bronchiectasis is frequently accompanied by varying degrees of bronchial obstruction. Whether the obstruction precedes the bronchiectasis, or whether the bronchiectasis precedes the obstruction is not entirely clear. We do know that the two lesions are frequently associated. In these cases the roentgen examination will show, in addition to the characteristic findings of bronchial obstruction, dilated bronchi beyond the obstructed area in which there may or may not be retained secretion. If the bronchi are empty, the affected area will show multiple areas of diminished density resembling a cluster of grapes. If they are partially filled with secretion, multiple fluid levels resembling small abscesses may be seen. It is in these cases that introduction of lipiodol is of greatest value.

In children, the most common cause of bronchial obstruction is a foreign body. They may be either opaque or nonopaque, and may cause either complete or partial obstruction. With the exception of the opaque foreign body which can usually be demonstrated easily, the findings are the same as in other cases of bronchial obstruction. It is important to remember that a nonopaque foreign body may show no variation from the normal on a film taken at full inspiration, whereas a film taken at expiration demonstrates the inability of the involved lung to contract.

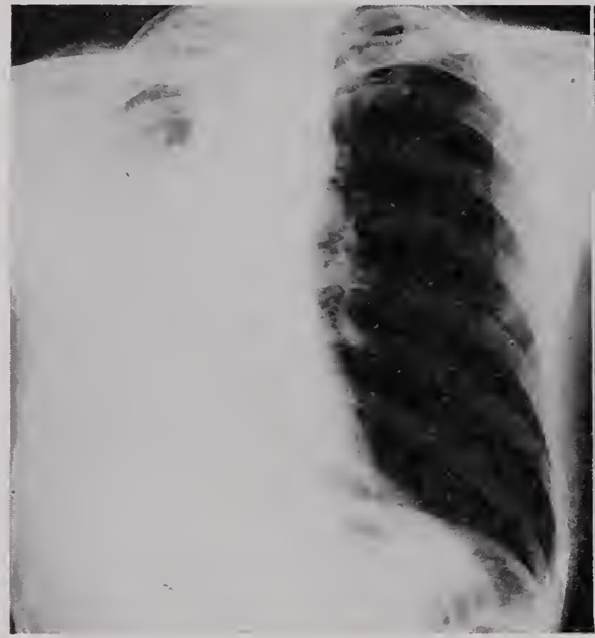

Fig. 2. Carcioma of the right main bronchus; collapse of the middle and lower lobes. Note the displacement of the heart and mediastinum to the right.

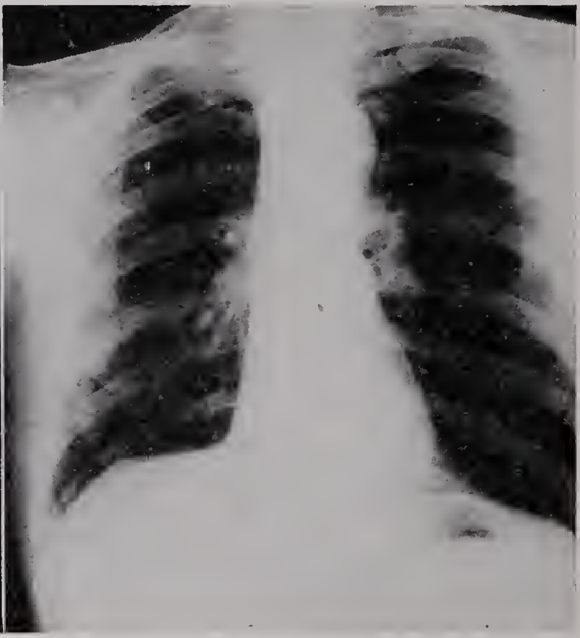

Fig. 3. The same as fig. 2 after treatment with supervoltage roentgen rays. Shrinkage of the tumor has permitted air to enter bronchus and lung has reexpanded.

We have now come to the most important cause of bronchial obstruction, namely, benign and malignant tumors of the bronchi. It is only quite recently that these tumors have been diagnosed with any degree of accuracy except on the autopsy table. In the past many of these cases were treated as tuberculosis, others as metastatic tumors of the lung. The more general use of the roentgen ray in chest examinations and the advances made by the thoracic surgeon and the bronchoscopist have made possible the correct diagnosis of these lesions at a comparatively early stage in their development, at a time when therapeutic procedures may be instituted with some hope of cure. The disease is not an uncommon one.

At the Massachusetts General Hospital we have been able to collect 475 cases of bronchiogenic tumors, most of them during the last six years. A considerable percentage of them were in a stage of the disease in which some palliative or curative procedure could be attempted. From the material obtained at biopsy it has been possible to group these cases histologically and to form some idea as to the roentgenologic findings likely to be present in each group; also to determine to some extent the probable result according to the type of tumor present.

The benign tumors, most of which are adenomata, are a particularly important group to recognize. Surgical removal of these tumors with the infected lung almost invariably results in a cure, and the surgical mortality in this group is very low. Untreated, or when treated by irradiation, the result is chronic, suppurative disease, and usually death after a prolonged illness. This difference in therapeutic results makes the diagnosis of major importance.

The roentgen findings of importance in these cases are the demonstration of a rounded, sometimes pedunculated tumor within a major bronchus. In none of our cases has a tumor of this type appeared in a smaller bronchus. The hilar and peribronchial glands are usually not enlarged, at least not to the extent seen in malignant tumors. Fluid is usually absent from the pleural space except in the late stages of the disease and after extensive pulmonary infection has taken place. These tumors are usually reached easily by the bronchoscope and a specimen for histologic study can be obtained. When the roentgen findings are suggestive of benign bronchial neoplasm, the bronchoscopic examination becomes imperative.

The oat cell and undifferentiated carcinoma of the bronchi form another group in which the differentiation is of considerable importance. These are rapidly growing tumors which metastasize early, and in none of our cases has a cure been effected by surgical means. On the other hand, these tumors are quite radiosensitive. In some of our cases in this group a complete disappearance of the primary tumor has been brought about by this form of treatment. No cures have been effected, but life has been definitely prolonged and symptomatic relief has been obtained. The roentgen findings are not characteristic, but in a considerable number of cases they show, in addition to the evidence of bronchial obstruction, a diffuse infiltration of lung tissue in the region of the affected bronchus with fine lines running out into the adjoining tissues, suggesting the appearance seen in certain primary sarcomata of the bone.

Adenocarcinomata of the bronchi are of interest because in our group they appear in about equal frequency in men and women. They frequently metastasize to the brain. They often show rounded, sometimes lobulated, masses in the lung substance close to the affected bronchus. They are particularly resistant to irradiation.

The epithelial tumors are by far the most common. They are slow growing as a rule, and present all the characteristic signs of bronchial obstruction. They may closely simulate any of the other forms, but usually the signs which identify the tumors previously described are absent. Epithelial tumors respond to large doses of irradiation, but the best results have been obtained by surgical removal in selected cases. Irradiation is an excellent palliative procedure in inoperable cases, but it should be used cautiously in those cases showing evidence of infection. Figures 2 and 3 show the palliative results obtained in an obstructing carcinoma of the right lower lobe bronchus.

In closing, I should state that bronchial obstruction is not an uncommon finding in diseases of the chest; that its roentgenologic demonstration requires a special technic, which should not be neglected, especially in those cases in which the clinical findings suggest the possibility of neoplastic disease; and that, when the roentgen findings are also suggestive, the diagnosis should be promptly established by bronchoscopy or other means.

PSYCHONEUROSIS IN WORLD WAR II

N. K. Rickles, M.D.
SEATTLE, WASH.

Today we are fighting a new type of war, in which hazards to life and security confront us, whether in the armed forces or home front. With this threat before us of developing psychoneurosis into a major problem becomes increasingly evident. Previous experiences in World War I show that these diseases numbered high in the list of disabling maladies and actually one-third of the unwounded, or one-seventh of those discharged from the British army were permanently unfit on account of psychoneurosis or mental disease.[1] In England over sixty-five thousand received pensions because of these diseases, while in the United States last year the one billion dollar mark was reached for the care of veterans disabled due to mental diseases. There was a great deal of confusion, especially in the early treatment of these cases, and as a result many acute cases became chronic invalids and added greatly to the already taxed resources. It is in the hope of promoting a better understanding of psychoneurosis and in prevention of much of the aforementioned that this paper is presented.

PREDISPOSING FACTORS

There are certain individuals, whose background of heredity and constitutional makeup predispose to the development of this neurosis. Particularly is this true where there is a positive history of former maladjustment or psychosomatic complaints. The stress and strain of war will cause a recurrence. Inasmuch as over 65 per cent of the neurotics fall into the above classification,[2] they should not be inducted into the armed forces and we could thus eliminate at the very source the largest number of cases. *This primary factor should be taken into consideration while armies are being formed and not after they reach the front.* Suggestive findings in the history are easy fatigability, chronic headaches, backaches and other somatic complaints without adequate physical basis. Evidences of unstable personality, such as alcoholism, criminal tendencies, inability to hold positions, etc. should be given careful consideration.

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[1] Smith, L. H.: Psychiatric Aspects of Military Medicine. M. Clin. North America. 25:1717-1759, Nov., 1941.

[2] Cobb, S.: Review of Neuropsychiatry for 1941. Arch. Int. Med. 68:1234-1245, Dec., 1941.

With all persons falling into this classification the ounce of prevention should rule over the pound of cure. The psychiatrically unfit should be eliminated before they are subjected to the conflicts and strains of military life, for if subjected to these conflicts and strains, they will break under them.

Assuming that we have eliminated this large group through proper examination, then the conflicts and strains that make normal men break under the routine of army life and combat service should be carefully analyzed. We have now sufficient background in World War II to give us better insight into many of these factors.[3] Experiences in Spain,[4] Dunkerque[5] and the Egyptian campaigns have shown that excessive strain imposed on an average sound soldier is sufficient to cause neurosis. This accounts for more casualties than any other disease.

Fatigue, poor diet, insufficient sleep, dehydration, isolation and constant threat of danger will precipitate either an anxiety or hysterical reaction. These physical factors may reduce the individual's resistance to a point where he loses control. As disastrous as the actual physical stresses of the battlefield is an equally dangerous stress in the boring monotony of noncombat service which results in passivity, indifference and depression. These environmental tensions are very hard to combat, but something is gained if it is realized that neurosis can develop in the normal individual, if his resistance is sufficiently lowered. Every attempt should be made, wherever possible, to reduce these stresses to the minimum necessary for army efficiency.

PSYCHOLOGIC FACTORS

Having taken into consideration the place of hereditary and environmental factors in the development of war neurosis, we come to the main etiologic factor, the psychologic. War neurosis is probably most often brought on by the internal conflicts of the individual soldier.

One of the principal conflicts faced by every soldier is that between the instinct of self-preservation and the social urge to do one's duty. Other conflicts are brought about by inability to express fear over death, feelings of guilt over killing, increased responsibility, separation from family and sex deprivation. Any of these conflicts may be sufficient to precipitate an emotional disorder.

I think the main source of war conflicts is the deep seated belief that fear and cowardice are one and the same.[6] From early childhood we are taught to be afraid of nothing and taunts of "fraidy-cat" and being called a coward create a tremendous vital impression. This continues through our adolescent period, in athletic contests and daily pursuits until it becomes a living part of us. In war we are expected to face the possibility of being shot, gassed or bombed without any display of fear. Patriotism is too apt to refuse to admit fear can exist. If the population could be reeducated concerning fear and made to understand that fear and cowardice are not synonymous, a large step would be taken toward lessening this conflict.

Soldiers should realize that they can be brave and still be afraid. Fear is a normal reaction to danger. It is nature's way of preparing an individual for anything that threatens his existence. One should not be afraid of fear, but take all precautions to prevent the danger that brings it about. The reason we are at war is because we are afraid of Hitlerism and as a courageous nation are taking all necessary steps to stamp out this menace to our future happiness. If one allows the duration of fear to be prolonged, anxiety results and with it the attendant nervous symptoms of tension, restlessness and fatigue.

An individual hypersensitive to his own emotions, finding himself in extreme danger and because of the accepted social training of not displaying or giving some emotional evidence outwardly of his fear, becomes aware of a normal physiologic reaction to fear, the rapid heart, tenseness of the muscles, dry mouth and disturbances in the gastric tract. Not understanding what it is that provokes this response and unable to admit the feeling of fear, the individual becomes more and more aware of his physical factors and less aware of the psychologic basis for them.

Thus more and more of his energy seems to become focused on what was originally the normal component reaction to fear, and there is no hesitancy to admit that the reason he could not carry on his army life in the face of danger was due to actual physical conditions, and not because he was afraid of becoming killed or injured. He now becomes disabled by his bodily complaints without loss to his ego and self respect, and becomes relegated to the hospital because of this physical disability.

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[3] Sutherland, J. D.: Survey of One Hundred Cases of War Neuroses. Brit. M. J. 2:365-370, Sept. 13, 1941.

[4] Mira, E.: Psychiatric Experiences In Spanish War. Brit. M. J. 7:1217-1220, June 17, 1939.

[5] Hadfield, J. A.: A Year In Neuropathic Hospital. Brit. M. J. 1:281-285, Feb. 28, 1942.

[6] West, R.: "Awareness" of Fear. Brit. M. J. 1:395, March 21, 1942.

The above could be avoided, if in the course of training and developing an army, soldiers were made to realize that all men, regardless of their rank, intellectual or physical ability, feel the same as they do and there is no shame attached to admitting fear in the face of danger. The subject should be openly discussed and the physiologic response to fear should be emphasized as a normal reaction.

The morale of the soldier should be strengthened. The American way of life, with its freedom and equality as compared to the slavery and dictatorship of his foe, should be ever before him. He also should realize that as a fighting unit we are now prepared and are superior to our foe.

The soldier has only a certain amount of expendable energy. This precious force should not be sapped by inner dissatisfaction, boredom, resentment against officers, Congress, etc. It should be wholly directed against our ultimate goal, defeat of the Axis. This untrammeled "will to fight" can be his if, first, he is reasonably assured of protection for his family and for himself at home; and, second, is he has some clear objective besides a remote impersonal victory. That is, he must have hope and faith in his future.

To secure the confident outlook the soldier must understand the following truths: It is not the President, Congress or the draft boards that have put men into uniform, but the aggressive, greedy acts of the dictators. Hatred of them is righteous; they are the ones who threaten the soldier's home, his loved ones and his future. They are the brigands who have forced him to fight; it is they who have temporarily stripped him of free choice. It is they who would reduce him to permanent slavery and rob him forever of his heritage.

The postwar period is alerady the subject of our economic planning, and these plans should be made so concrete and specific that the soldier may be assured that they will provide for his own individual security. A well adjusted and adaptable group will result, prepared for all emergencies, and there will be little tendency toward development of the anxiety states that are so prevalent today.

CLASSIFICATION

Any classification of psychoneurosis, aside from the simple one between "anxiety neurosis" and "conversion hysteria," both acute and chronic, is unnecessary as the principal element depends largely on the group of complaints to which the patient has been conditioned. Practically all make a fairly characteristic picture. The alert officer or medical man will observe restlessness, inability to sleep, poor appetite, irritability, easy fatigability, beginning excessive smoking and alcoholism, unstability, crying spells and sweating. It is during this period that recognition of beginning collapse should be noted and immediate medical attention should be given so that these cases may be arrested in their incipiency by slight changes in either work or by suggestion. While many men claim this is impossible in war, to single out individuals when so many need the care of officers, it will be necessary to point out that, just as it is essential to isolate cases of measles or scarlet fever before an epidemic takes place, so it is essential to arrange for special treatment for the psychoneurotic before he is able to influence others who, like him, are susceptible to this ailment.

The actual clinical picture varies. Common symptoms are those of simple conversion hysterias and the anxiety neurosis. Effort syndrome and the many other psychosomatic complaints should be included in the anxiety neurosis. In addition, there have been acute outbreaks of confusion and exhaustion that have resulted from intense bombings and disaster, such as occurred at Dunkerque. These apparently come on, due to intense danger and excitement with the attendant exhaustion due to tension, lack of sleep and food.

Interesting developments and latest reports from the war fronts reveal that, unlike World War I, there are fewer cases of hysterical neurosis and more of acute, shocked and anxiety states. This is explained on several bases: (1) due to the total war with its sudden explosive nature, which results in confusion and excitement; and (2) on the other hand, the fact that there are not the number of casualties due to artillery fire, which were observed in the former war, but rather the watchful waiting and expectancy for air attacks that do not come, for sinkings that do not occur, and this uncertainty and constant threat of danger to life which cause many of these unstable personalities to break.

The explanation is given that under fear it is easy to understand how so many psychosomatic complaints develop and continue to grow, more as a means of escape from a difficult situation.

PREVENTION

As stressed early in this paper, the most important essential in treatment of psychoneurosis is to prevent its occurrence. This may sound rather foolish, because of the obviousness of the remark.

Nevertheless, it is extremely urgent to reiterate and emphasize, if, in spite of our knowledge and the need of prevention, draft boards and army medical men are still under the delusion that these men are slackers and know that the army will do them good. On the other hand, the army does not want these men, as in our new type of warfare we have not the time to molly-coddle invalids and the effect that they have on discipline is sometimes disastrous. These men have been able in civilian life to make fair adjustment and, just as the army will not take men with arrested tuberculosis or heart disease, the same picture should be presented in these cases.

Medical men should be given primers in psychoneurosis and officers should be told to watch and carefully observe if men have any of the early prodromal signs, such as restlessness and irritability, and when these do occur take special means so that they will not become progressively worse. When the frank outbreak does develop, it is important that immediate care be given which consists of complete rest, good food and psychotherapy.

It is difficult to understand the many reports from England, where as much as six months to a year have gone by before these cases are finally sent to their proper destination, when it is almost too late to get results. One would not attempt to treat a man with an amputated leg at the front, so why retain a man who is just as helpless an invalid. Treatment toward further prevention should consist of proper recreation facilities and talks by medical men on the various phenomena of warfare, particularly where the element of fear is involved. Many men, who are under the assumption that their psychosomatic complaints are being neglected, if properly approached and good explanation given them at the outset, could undoubtedly take their place again as better adjusted soldiers than formerly.

TREATMENT

Early adequate treatment is essential. Food, forcing of fluids, particularly in the case of exhaustion, employment of sedatives and hydrotherapy where available are very helpful. This should be followed up where necessary with proper psychotherapy. If it is impossible to reach the proper rapport, it may be further necessary to induce hypnosis or mild intoxication with drugs to render the patient more accessible so that he may be able more easily to recall and relive his dreadful experience.

CONCLUSIONS

1. Where an individual has had a previous history of nervous or mental disease, it is quite likely to presume that under the stress and strain of war it will recur. All such cases should be eliminated before armies are formed, not afterwards. This would prevent 65 per cent of all war casualties due to the psychoneuroses.

2. Healthy normal men can break under unusual strain from fatigue and exhaustion. These cases are usually acute and early and adequate treatment will cure them.

3. Fear is a normal reaction. This fact should be explained to soldiers during their training period so that when they have to face danger they will not be ashamed of this normal reaction. They should be encouraged to speak about their emotions and their officers should be understanding and intelligently equipped to deal with their problems. Officers' training should include primers in morale building of soldiers and particular stress should be laid on the proper explanation as to the mechanism of fear and its attendant symptoms. If the above is neglected, many cases of anxiety states will occur.

4 The psychoneuroses should be classified under the two chief headings of anxiety states and hysteria.

5. Early and adequate treatment is essential, patience and tact instead of gruffness. Where the individual is not making progress at the front, he should immediately be sent to a base unit equipped to handle such cases.

6. If the above factors are taken into consideration now, thousands of casualties will be avoided, millions of dollars will be saved, and we will have a much more efficient and decidedly happier army with splendid morale.

HOW SURGEON HELPED SAVE HOSPITAL

How a British surgeon helped save a hospital that had been bombed is described in *The Journal of the American Medical Association* for October 24 by the regular London correspondent of *The Journal* who reports that:

"High explosive and incendiary bombs fell on a hospital, setting it on fire. The house surgeon, Dr. Philip Baxter, wearing a dressing gown over his pajamas, climbed a fall pipe to the blazing roof. Then he used the girdle of his dressing gown as a rope to hoist up buckets of water, which were tied on by helpers below. He got the blaze under control. In leaping from the roof to a lower one he injured an ankle but went to the operating theater to attend the victims of the raid. When there a message came that an elderly woman was trapped under wreckage in another part of the town and that medical help was urgently needed. He went and had to crawl down a tunnel in the debris to administer morphine. He waited until she was extricated and sent to the hospital. He then hobbled back but was in great pain. While on his way a policeman lent his bicycle. Cycling was no less painful but was quicker. On arrival he returned to the operating theater and continued his work. Only after he had been on duty for several hours did his own injury receive attention . . ."

WATER BALANCE IN PREGNANCY*

R. D. Reekie, M.D.
SPOKANE, WASH.

It is the purpose of this paper to discuss water, electrolyte and acid-base balance during pregnancy. It will be necessary to review facts which have been established in the nonpregnant individual.

Fluid exchange can be outlined as illustrated in figure 1. Loss of water by stool is negligible except in pathologic conditions associated with diarrhea. The amount of water lost by vaporization varies with environment and body temperature. From the standpoint of pregnancy the most important single item in the intake and excretion of water is that which is excreted via the kidneys. Water is available to the kidneys for excretory purposes only after control of body temperature by vaporization has taken place.

Available water	c.cm.	Excreted water	c.cm.
Water drunk	1,200	Water of urine	1,200
Food, diet, or body substance			
Water content	1,000	Water of stool	100
Water of oxidation	300	Water vaporized	1,200
	2,500		2,500

Fig. 1. Components of water balance in health.

Gamble[1] emphasized the importance of electrolytic and acid-base balance in the distribution of body water. Figure 2 illustrates diagramatically the three compartments of the body involved in the shift of water. Fluids pass from one to the other, depending upon the requirements of the respective chambers. The concentration of the various electrolytes and their normal distribution are essential to normal function. In health there is a fine balance, the concentration of electrolytes being kept within a relatively narrow range of fluctuation. Deviations from normal are caused by, or lead to, definite pathology.

Figure 3 illustrates the various ions, their relative concentrations and their interrelationship in acid-base balance. In the blood plasma and interstitial compartments the principal base is the sodium ion and the principal acid the chloride ion, while in the cell the principal base is the potassium ion and the principal acid the phosphate ion. For all practical purposes the sodium and chloride ions do not cross the cell membrane.

To illustrate the importance of this point let us suppose that one injects excessive sodium chloride and the kidneys are not capable of excreting it as rapidly as it is injected. In order that the blood plasma may be maintained within normal limits, the excess sodium chloride temporarily passes into the interstitial compartment. This calls for water to dilute it to a concentration which is physiologic. The two sources of fluid to the interstitial compartment are the blood plasma and the parenchymal cells. Water shifts from the intracellular compartment and, to a lesser extent, from the blood plasma into the interstitial compartment.

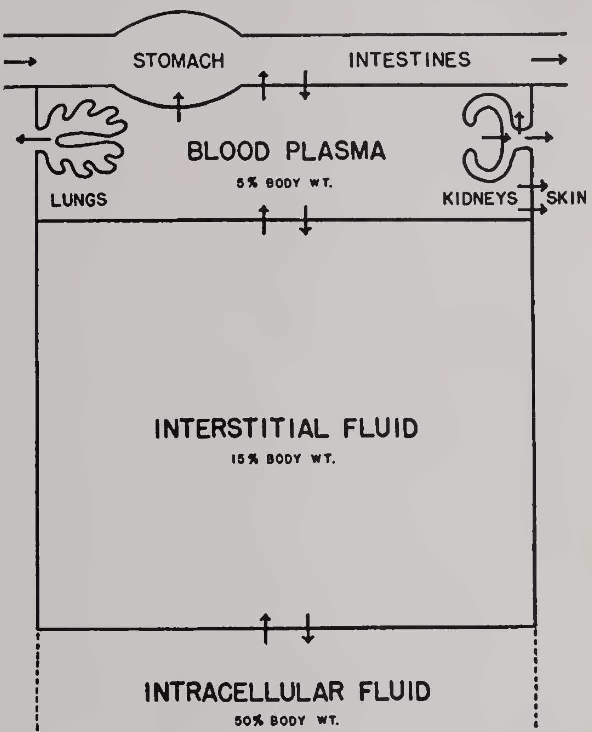

Fig. 2. Diagrammatic representation of body compartments as they relate to fluid balance.

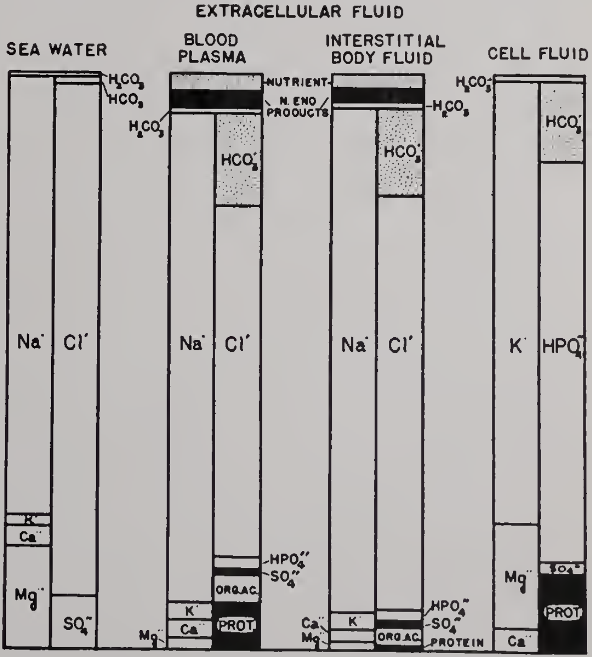

Fig. 3. Relationship betwen body compartments and electrolytes.

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*Read before Annual Obstetrical Refresher Course at University of Oregon Medical School, Portland, Ore., Jan., 1942.

[1] Gamble, J. L.: Renal Defense of Extracellular Fluid: Control of Acid-Base Excretion and Factors of Water Expenditure. Bull. Johns Hopkins Hosp., 61:174-197, Sept., 1937.

By this mechanism the injected material, or in pathologic conditions where the kidneys fail to function normally, retained excretable material accumulating in the interstitial compartment, leads to edema. As a result, a depletion of intracellular fluid takes place and the cells temporarily become dehydrated. The physiology of the interstitial compartment may be disturbed to the extent of being unable to transport nutrient and waste material between the cells and blood plasma, or to regulate body temperature by vaporization.

It has been shown by Newburgh and his co-workers[2] that normally functioning kidneys are capable of excreting large quantities of waste material in concentrated urine, but damaged kidneys require much larger volumes of urine to excrete the same quantity. Figure 4 illustrates the relationship between kidney function and the ability to excrete urinary solids. Solids not excreted accumulate and, if retention is carried beyond physiologic limits, pathology develops.

Table 1.

	Restricted Intake of Fluid for 24 Hours		Water by Mouth as Desired for 24 Hours	
	Urine		Urine	
	Water	Solids	Water	Solids
Subjects	c.c.	grams	c.c.	grams
Normal	501	35	877	37
Hypertensive, non-edematous nephritis	1804	33	4922	38
Chronic edematous nephritis	211	12	3948	35

Table 2. Minimum amount of water needed to excrete 35 grams of waste materials.[1]

Status of kidneys	Maximum concentrating ability Specific gravity	Minimum water needed c.cm.
Normal	1.032 to 1.029	483
Diseased[2]	1.028 to 1.025	595
	1.024 to 1.020	605
	1.019 to 1.015	850
	1.014 to 1.010	1439

[1]Calculated from Lashmet and Newburgh.

[2]Chronic nephritis, pyelonephritis, renal tuberculosis, et cetera.

Fig. 4. Composite tables illustrating the relationship between kidney function and potential urine excretion.

Plasma proteins affect the osmotic shift of body fluid to an insignificant degree when compared to the effect of a shift of electrolytes. There is a direct relationship between electrolytic balance and plasma proteins. The large protein molecules are not readily diffusible through cell membranes and capillary walls. Hence, when the normal ionic equilibrium is upset, it is the electrolyte which shifts rather than proteins. Thus protein concentrations become disturbed.

The osmotic pressure exerted by albumin is roughly four times greater than that of globulin. The importance of this is readily seen in those conditions such as nephrosis, where albumin is lost via the kidneys. The lowering of osmotic pressure of plasma thus brought about (fig. 5) leads to a loss of electrolyte and water from the blood and production of interstitial edema.

The one ion which is common to all three body chambers is bicarbonate. It acts as a buffer in acid-base balance. The phosphate ion is also a buffer as it is capable of being diphasic in extremes of disturbed acid-base balance. The acid-base control by means of bicarbonate is a nearly perfect reaction. In hyperacidity, carbonic acid is formed, transported to the lungs, and dissipated as water and carbon dioxide. The basic ion thus liberated combines with and neutralizes the excess acid ion. In severe acidosis sodium is conserved by the formation of ammonia which unites with the acid radical, and the ammonia salt formed is then excreted via the kidneys. If the body becomes alkaline, the bicarbonate ion increases, neutralizes the excessive base, and the resulting salt is excreted via the urinary tract.

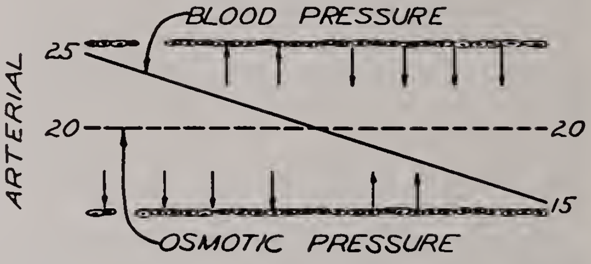

Fig. 5. Illustration of the reciprocal effect between blood pressure and osmotic pressure in the fluid exchange.

There is an important relationship between acid-base balance and distribution of body water. Excess sodium ion leads to retention of fluids, primarily within the interstitial spaces, while fluid is lost with excretion of the sodium ion. Changes in hydrogen ion concentration per se are less important than dehydration in bringing about alteration in physiology. Loss of 10 per cent of the water of the body results in serious disorder; a loss of 20 per cent may be incompatible with life.

The shift of fluids in the body has been discussed. Nothing has been said about superhydration or water intoxication. Most of us are often reluctant to force fluids because of fear of their retention causing edema, particularly pulmonary and cerebral edema. Experiments show that all normal, as well as many abnormal individuals can tolerate large quantities of fluids without circulatory embarrassment. Prodigious quantities of intravenous fluids have been given rapidly to experimental animals without producing serious damage. It is difficult to produce superhydration.

Summarizing thus far, body fluids are contained

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2. Newburgh, L. H.: Newer Knowledge of Renal Diseases. Bull. Acad. Med., Toronto, 10:133-144, April, 1937.

in three main compartments, blood plasma, interstitial fluid and intracellular fluid. The fluid in the interstitial compartment acts as a buffer between the plasma and the cells. The plasma and the cells must be maintained within narrow limits, whereas the interstitial fluid may vary within wider limits. Acid-base balance bears a very important relationship to fluid balance. The important ion involved in this is the sodium ion. An increase in sodium leads to hydration, a decrease to dehydration. The body has an intricate system of acid-base balance, depending upon dissipation of the bicarbonate ion via the lung to counteract acidosis, and dissipation of the sodium ion via the kidneys to counteract alkalosis. Dehydration is more important in control of normal physiology than is the shift in the acid-base balance. And, lastly, superhydration of the body is difficult to effect.

A group of us[3] elected to determine how a pregnant woman reacts to fluid and acid-base balance. A suitable subject was found in a seventeen year old high school girl. She had been in splendid health prior to, and was well throughout pregnancy. Beginning on the seventeenth day before delivery she was fed on a simple weighed diet affording 2,143 calories or 46 per kilo, pregravid weight. Complete water balance was determined. Sodium balance was calculated by comparison of the intake and urinary excretion of the element. (It has been shown that sodium excretion via the stool is negligible.) The amount of sodium lost via the skin was ignored, as the patient was kept in a uniform environment which avoided sweating. Metabolic studies were conducted in a specially constructed metabolic chamber.

Pregnancy ended at term by spontaneous delivery of a healthy male baby. Throughout the study the patient cooperated splendidly. She ate all food and drank all fluids provided, except on the day of delivery and for two days in the early postpartum course. Vomiting, proteinuria or glycosuria never occurred, hence the intake, urinary and fecal excretions of the substances studied were satisfactorily determined. During the periods of greatest gain in body weight sodium was retained in amounts greater than usual (fig. 6).

To study the effect of an abrupt increase of sodium, 5 Gm. of salt were fed daily for a short period of time. There was a retention of sodium and of 1,000 Gm. of water in excess of that used in the formation of new tissue during the first three days of this period. During the second three days smaller quantities of sodium were retained and the elimination of water exceeded intake by 200 Gm. This response to sodium is identical to that observed in a normal nonpregnant individual (fig. 7). There was retention of water during each period in which weight increased more rapidly than usual, just as there was a retention of sodium during these times. Our subject responded to a sudden increase of sodium intake in a normal man-

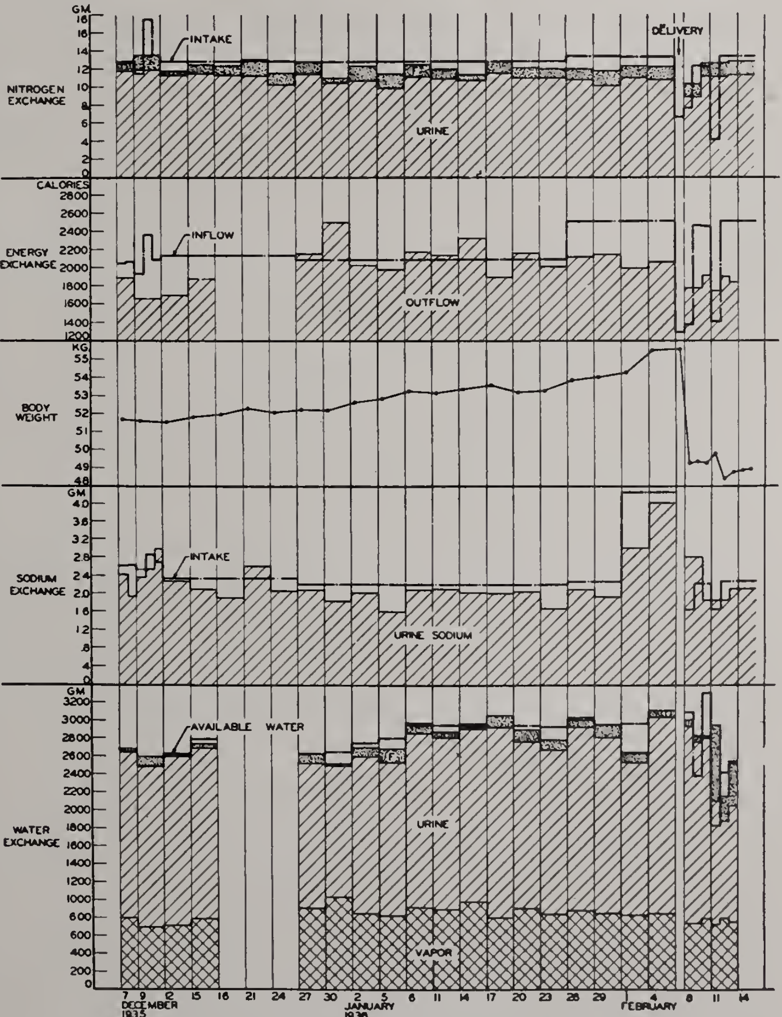

Fig. 6. Composite graph obtained in the study of fluid balance and other elements in a normal pregnant woman.

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[3] Freyberg, R. H., Reekie, R. D. and Folsom, C.: Study of Waters, Sodium and Energy Exchange During Latter Part of Pregnancy. Am. J. Obst. & Gynec. 36:200-207, Aug., 1938.

ner, which is at first a retention and later a corresponding loss of water.

The calculation of total water exchange for the nearly three month period left a gross error of 636 Gm. that cannot be accounted for in the formation of new tissue, both by the fetus and maternal organism. Since fluctuation of 500 Gm. of body water is normal and a gain or loss up to 1,000 Gm. has been observed in a normal male individual, when the intake of food and water and physical activity are constant, it cannot be considered that a retention of 636 Gm. of water by our subject is significant of superhydration. This response is identical with that observed in normal nonpregnant individuals, and it indicates that *the same factors that govern water balance in the nonpregnant individual are existent during pregnancy.* The most important of these is the relation of the intake of inorganic elements, chiefly sodium, to water balance.

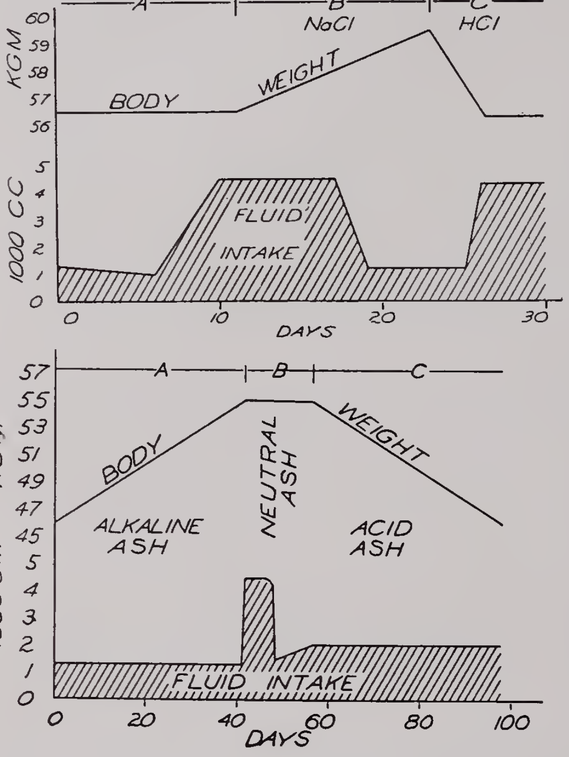

Fig. 7. Composite graphs illustrating the effect of change in hydrogen ion concentration in the body brought about by salt, hydrochloric acid and various diets on fluid balance and body weight.

Coller and Maddock[4], from repeated experiments with surgical patients, have shown that there is between 1,000 and 1,500 cc. of daily fluid necessary for water of vaporization and a similar amount for the urine. Obviously, with complications, such as fever, hyperthyroidism or hot, humid weather, these requirements are considerably increased (fig. 8). We are not so much concerned with the requirements for vaporization as with those for urine excretion. If we keep in mind the fact that water for vaporization receives priority over water necessary for urinary excretion, we find that, if we are alert to the requirements for kidney function, the water for vaporization automatically takes care of itself.

Data illustrating the difference in the ability of a patient to excrete an excessive intake of sodium chloride when in poor general condition because of sepsis and later when well. (Surgery, Gynecology and Obstetrics.)

	Patient Septic					
	Physiological saline solution intravenously		Output urine		Body weight	
Date	c.cm.	gm.NaCl	c.cm.	gm.NaCl	66.6 kg.	Change
Nov. 25	2890	25.5	730	2.5	67.3	+0.7
Nov. 26	2995	27.3	1466	13.1	68.3	+1.0
Totals	5885	52.8	2196	15.6		+1.7
	Patient Well				65.9	
Dec. 18	2973	25.3	2468	12.1	64.7	—1.2
Dec. 19	3477	29.6	2542	24.5	64.0	—0.7
Totals	6450	54.9	5010	36.6		—1.9

S. G. Age. 59. Admitted Nov. 24 with acute suppurative olecranon bursitis. Fever to 102.6 degrees F. Given 5 per cent dextrose in physiological saline solution when septic and later when well.

Fig. 8. Illustrating the effect of disease on sodium and fluid balance.

What is the minimum amount of urine, below which one should be concerned and what is a satisfactory twenty-four hour urine output? It has been determined by Lashmet and Newburg that the average individual excretes 37 Gm. of waste material via the kidneys in a twenty-four hour period. The normal individual requires in the neighborhood of 500 cc. of urine a day to excrete the average daily amount of waste material. Many individuals have minor degrees of renal impairment without clinical symptoms of impairment, and are not capable of excreting urine of a concentration sufficient for the complete removal of the body wastes in that small volume of urine.

In pregnancy one must reckon with other factors, notably the waste material from the fetus and secundines as well as increased maternal metabolism. The actual amount of excretion may rise to as high as 50 Gm. per day. Coller and Maddock recommend 1,000 cc. of urinary output per day for the normal surgical patient, and for the ill patient, particularly with some renal impairment from any cause, a water intake that provides at least 1,500 cc. of urine daily.

Assuming that a pregnant patient has a normal renal function and the amount of waste material that is excreted through her kidneys is between 35 and 50 Gm. per twenty-four hours, it is desirable that she have a urinary output between 1,000 and 2,000 cc. daily. Request her to collect, every time she comes in for antepartum checkups, a twenty-four hour urine specimen. Ask her to report the total volume of urine output, emphasizing that this should be in the neighborhood of one-half gallon per twenty-four hours and that anything under a quart and a half is insufficient. Check the specific gravity, and if this rises above 1.020 to 1.022, warn her that she is drinking insufficient fluids. If there is impairment of renal function, determine the renal concentrating ability and adjust the total urine output requirement to fit the case. The lower the concentrating ability, the larger the volume of urine that should be recommended.

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[4] Coller, F. A. and Maddock, W. G.: Water and Electrolyte Balance. J. Surg., Gynec. & Obst., 70:340-354, Feb. 15, 1940.

We now turn to abnormalities which may arise during pregnancy. The simplest of these just discussed is lack of sufficient fluid intake. A corollary to this is found in the individual who is losing excessive fluid via the insensible route, namely the skin and lung, due to increased body or environmental temperature. Urinary waste material is constantly damming back in the plasma and interstitial space. A toxic situation leading to a decreased level of cell function arises, and a vicious cycle is set up. The kidneys take part in the toxic results, and their excreting ability becomes reduced. This process is corrected by proper ingestion of fluids. Should the acid-base balance be disturbed, it may be necessary to rehabilitate the ionic equilibrium.

Edema is most often due to immobilization of waste materials in the interstitial compartment and not to the inability of the kidneys to excrete these substances. Even severely damaged kidneys are capable of excreting all of the waste material presented to them, providing sufficient fluid is available. The functional ability of the kidneys is best determined by the concentration test. Specific function tests, such as urea clearance or dye excretion, measure separate functions, whereas the concentration test measures the total ability of the kidneys.

In the renal concentration test the patient is deprived of water until the kidneys are forced to concentrate the urine to their maximal concentrating ability. Because of its simplicity the test can be performed by anyone who can measure urinary specific gravity. Beginning after an evening meal, the patient is allowed no fluids until the maximum specific gravity has been reached. This is usually in at least forty-two hours. During this time it is not necessary that food be eaten, but if it is, it should be chosen for its dryness, such as bread, crackers, dry cereal, butter, heavy cream, sugar and dried fruits.

The patient is instructed to discard all urine up to bedtime of the second night and from this time on to collect all urine passed in three separate clean, dry containers. The first of these should consist of all urine passed from bedtime the second night until 8 a.m. the next morning. The second specimen consists of all urine passed between 8 and 10 a.m. Specimen three consists of urine passed between 10 a.m. and 12 noon. The bladder is emptied at the end of each interval of collection. The specific gravity obtained is the top level of renal concentrating ability. In determining the specific gravity one should measure it at the temperature indicated on the urinometer and it should also be corrected for alburinuria. The latter procedure can be carried out by calculating the percentage concentration of albumin in the urine by some standard method such as Esbach's or the sulfosalicylic acid turbidity method of Newburgh. A 1 per cent solution of albumin has a specific gravity of 1.003. This figure must be subtracted from the urinometer reading in order to obtain the actual concentrating ability of the kidneys. A normal person under these conditions can concentrate urine to at least 1.029.

Vomiting of pregnancy causes a loss of chloride and a retention of sodium. This leads to alkalosis. There is a reduction of fluid intake and starvation. Thus, there is dehydration, alkalosis and starvation acidosis. In hyperemesis the situation may become grave. If there is a fecal type of vomiting and/or diarrhea, the increased loss of the sodium ion from the lower bowel, added to the acidosis from starvation, may ultimately lead to a dehydration incompatible with life. Treatment should be directed toward the correction of the negative fluid balance. Electrolytic balance can be restored with sodium chloride and ketosis with glucose.

There is danger of water retention in the excessive administration of sodium chloride. Fluids lost from the gastrointestinal tract are usually mildly hypotonic. Some estimation of the volume of vomitus or stool fluid loss should be made and only slightly more normal physiologic saline administered. If blood chemistry determinations are available, the amount of saline that is required may be determined by giving 0.5 Gm. of salt per kilo body weight for every 100 mg. per cent that the blood sodium chloride is below normal (560 mg. per cent). Thus a 40 kilo woman with a blood level of 460 mg. per cent would require 1 x 0.5 x 40 or 20 gm. of salt. About 2,500 cc. of normal saline (0.8 per cent) would bring her level to normal.

Five per cent glucose in almost unlimited quantities may be administered without materially disturbing ionic equilibrium. Glucose is readily available for metabolism, sparing protein and fat of the body from combustion. It also decreases ketosis by furnishing carbohydrate for combustion of fatty acids. The carbon dioxide formed is dissipated via the respiratory system or helps restore bicarbonate ion, and the water becomes available to the kidneys, along with the water of the glucose solution, for the excretion of urinary waste. It is rarely necessary in these cases to administer sodium bicarbonate solution. However, if blood studies reveal elevation of N. P. N. and accumulation of ketone bodies with decreased carbon dioxide combining power, 2 per cent sodium bicarbonate may be given, care being taken to avoid alkalosis.

Consider the relationship between water, electrolyte, osmotic balance and the toxemias of pregnancy. Any woman may develop toxemia of pregnancy by virtue of previous renal damage or among other things by a concentration of urinary solids in excess of the maximum excretory ability of her kidneys. Normal kidneys may be injured by a decrease of available fluid. This may be due to decreased fluid intake or diversion to other purposes, as for example, insensible loss of fluid brought about by hard work, fever or diarrhea. The increasing electrolytes of the plasma from fetal metabolism, plus those of the individual, necessitates increased urinary excretion. Blood plasma concentration leads to a dehydration of the cells which may be incompatible with life. Coma in severe toxemia, with or without edema, impaired function of the heart, liver and kidneys, may be due to dehydration of the parenchymal cells. One method of preventing toxemia is to insist on adequate urinary output.

When toxemia has developed, everything possible should be done to reduce intake and promote excretion of electrolytes. Salt should be withheld. The average diet is alkaline and heavy in electrolytes. A neutral or acid ash diet is preferable. Excess calories produce excess metabolic waste. The intake of calories should just satisfy the requirements of the patient. If the patient is capable of drinking, force water by mouth. If it is impossible for the patient to drink adequately, parenteral fluids are indicated. Isotonic glucose (5 per cent) in water, not saline, is the solution of choice.

In severe toxemia localized edema may produce pressure symptoms, yet convulsions of eclampsia may be caused by dehydration rather than by pressure. Eclampsia in nonedematous patients is more severe and more apt to be fatal than that occurring in edematous patients. Hypertonic glucose intravenously increases the molecular concentration of the blood. Although glucose is slowly excreted by the kidneys with poor diuretic effect, the smaller, more diffusible ions of the plasma are temporarily displaced into the interstitial compartment, setting up a hypertonic concentration which demands dilution. Fluid for this dilution is not available from the plasma because of the osmotic effect of the hypertonic glucose injected, hence the only available source is the cells. Further dehydration of the cells results.

Isotonic glucose should be forced. The metabolism of glucose gradually liberates water (glucose burns to give CO_2 and H_2O) with resultant added hydration of the plasma. The increased volume flow of blood thus produced through the kidneys increases electrolytic excretion. Interstitial osmotic pressure is reduced (by removal of electrolytes) and fluid again passes into the cells, overcoming the toxic effect of dehydration. Newburgh and coworkers have shown that anuric patients with severe nephritis will secrete urine, if sufficient fluid is administered. At first there may be a temporary increase of edema. This is beneficial in that it demonstrates hydration of a toxic, concentrated hypertonic fluid.

Fluid balance in toxemic clinic patients has been studied. The effects of a dehydration regime were contrasted with hydration therapy. Alternate patients were treated with alternate regimes. Mortality and moribidity in the group treated by hydration therapy were considerably lower than in the dehydration group. Patients in the hydration group were more comfortable and cooperative than those in the other group. In dehydration therapy the fluid allowed one day was equal to the urinary output of the day before. The damming back of metabolic waste in these patients and the toxic effect of treatment must be terrific. In the hydration regime the patient was placed on a neutral, sodium poor diet and the desirability of forcing fluids emphasized. If the patient cooperated by drinking 4,000 to 5,000 cc. or more of water daily, no parenteral fluids were given. If, however, they did not ingest that amount, parenteral fluids (5 per cent glucose in water) were administered. Commonly these patients excreted as high as 12,000 to 16,000 cc. of urine and lost 8 to 10 pounds in the first forty-eight to seventy-two hours of treatment.

The value of this type of treatment is revealed in a study reported by de Alvarez[5] from the Department of Obstetrics and Gynecology of the

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[5] De Alvarez, R. R.: Use of Neutral Diet and Hydration in Treatment of Toxemias of Pregnancy. Amer. J. Obst. & Gynec., 39:476-480, March, 1940.

University of Michigan. There were 435 toxemic patients of all types, including 55 with convulsions. In one group the treatment consisted of general care with a short period of observation and ample sedation and, if there was no improvement, special measures for delivery. They were placed on the treatment in vogue at the time, primarily, low protein, salt free diet and limited fluids. In the group treated by hydration therapy, bed rest, sedation, neutral diet with ample protein, ammonium chloride and abundant fluids with conservative delivery formed the basis of therapy.

The highest mortality rate was coincident with the highest incidence of cesarean section. This, of course, does not invalidate cesarean section as a means of terminating these cases but should be a warning against its promiscuous use. In the first group the maternal mortality was 7 per cent while the fetal mortality was 30 per cent. In the group treated by hydration and conservatism maternal mortality was 2.6 per cent, while the fetal mortality was 16.7 per cent. In other words, this regime reduced maternal mortality 66 per cent and fetal mortality 50 per cent.

SUMMARY

1. The kidneys are capable of ridding the body of metabolic waste materials if sufficient fluid is available.
2. Normal kidneys can excrete larger quantities of waste material in smaller volumes of urine than can damaged kidneys.
3. Edema is a manifestation of inadequate renal concentrating ability.
4. Dehydration of the body cells may occur in the presence of interstitial edema.
5. Toxemia of pregnancy may result from an insufficient fluid intake.
6. An important step in the prophylaxis of toxemia of pregnancy is a routine daily urinary output of 1,500 cc.
7. Addition of the fetal burden may be sufficient to cause an otherwise adequate renal function to become inadequate.
8. Adequate urinary excretion will help balance disturbed acid-base relationships.
9. Correction of disturbances of fluid balance may be effected by administration of water by mouth and/or isotonic glucose solution intravenously.
10. Sodium chloride should be used cautiously, only sufficient being administered to replace the amount lost. This can be determined by measuring the fluids lost from the body or by determining the plasma chlorides.
11. The concentrating ability of the damaged kidney is reduced. Therefore, one should increase the amount of fluid administered sufficient to rid the body of urinary solids.

CONSERVATION OF PHYSICIANS

As we approach the first anniversary of Pearl Harbor, we note the changing emphasis from the implementation of the armed forces to the implementation of the civilian medical services. Here lies the challenge to our professional ingenuity. How can we keep these services supplied from a dwindling reservoir of personnel? From a reservoir of men and women of fifty years of age and over? From an age group in which the death rate is already high and may be expected to rise as the pressure of work, loss of sleep, anxiety take their inevitable toll?

A first requisite seems to be the maintenance of the best possible health and efficiency of this group. Doctors have been slow, under normal conditions, to avail themselves of their own long-advocated periodic health and physical examinations. These now begin to take on a patriotic significance as a necessary move to conserve physician manpower. Perhaps the periodic physical examination has not been utilized by the physician because it has been an individual enterprise; he has had to initiate it himself. Under present conditions, however, we believe that in the nation's interest a collective enterprise under the guidance and sponsorship of the state and county medical societies is becoming a must. Both state and county societies have journals and bulletins which reach their members and by means of which a campaign of this kind can be conducted, not as a sporadic affair but as a continuing pressure. We urge the necessity for this pressure upon their members by the various county societies as well as the provision of facilities for its rapid accomplishment.

Another means for conserving the health and efficiency of the physician is adequate rest and sleep. It is now, and will be increasingly in the future, the concern of the community. We note that Nassau County is now distributing among its members a notice to be posted in their waiting rooms and offices entitled "Your Doctor, the War, and You." In paragraph 7, the notice says "remember that the doctor only has 24 hours in his day. He must sleep and he must eat. Help him protect his own health so he can take care of yours."

We venture to add to progressive Nassau County's doctor conservation program the suggestion that each physician who submits a report of his periodic physical examination to his county society, for inclusion with his P. and A. registration data, be given a lapel or other insignia to be worn as an indication that he has joined in the physicians' health conservation program of his county society. — Editorial, New York State J. Med., Oct. 15, 1942.

PROSTIGMIN IN DELAYED MENSTRUATION[*]

Dominick Parrella, M.D.
BROOKLYN, NEW YORK

In terms of frequency the phenomenon of amenorrhea is undoubtedly the most important problem confronting the gynecologist. In the not too distant past the causative factors underlying this phenomenon in all of its ramifications were veiled in the thick mists of obscurity. More recently our rapidly expanding knowledge of the endocrine system has served to shed considerable light on the subject and has enabled us to trace some not too tenuous links between the clinical manifestations and the causal endocrine imbalances.

Concomitant with, and perhaps more immediately important than the theoretical considerations of etiology, have been the eminently practical advances in the application of hormonal therapy to the treatment of amenorrhea. The use of gonadotropic, estrogenic, progestogenic and thyroid substances to initiate, establish and maintain a menstrual rhythm is too well known to require elaboration. Indeed, the success attendant upon the use of these substances in the treatment of primary and secondary amenorrhea has been so notable that, with the exception of the clear-cut nonendocrine types, there has been some tendency to overlook the fact that some etiologically borderline types of amenorrhea exist which are not entirely ascribable to endocrine dysfunction.

A recent addition to this class is the delayed menstruation so often encountered in nonpregnant women with normal menstrual histories. Hitherto these cases of delayed menstruation have generally been regarded as instances of temporary endocrine dysfunction brought about by psychic or environmental disturbances. As mild a disturbance as a geographic change of location has been known to disrupt temporarily an otherwise regular cycle in some women. Recent evidence, however, points to the possibility that delayed menstruation might be due to a lack of vascular response in the endometrium rather than to endocrine dysfunction.

The theoretical basis to this new concept had its origin in the work of Reynolds[1] who showed that estrogens produced a transient elevation in the acetylcholine content of rabbit uteri and that the well-known hyperemic effect of estrogens on the uteri of ovariectomized animals was not due to the direct action of estrin substances but rather to the increase in the acetylcholine content of the uterine tissues.[2,3] These fundamental observations were later supplemented by the work of Hechter, Lev and Soskin,[4] whose results made it manifest that the phenomena of estrus in the rat could be separated into: (1) the specific proliferative effect of estrogen and (2) the effects secondary to hyperemia. In addition, they showed that these latter effects could be reproduced by nonspecific hyperemic agents such as yohimbine.

Recognition of the importance of hyperemia and its causal agent, acetylcholine, in menstrual bleeding led Soskin, Wachtel and Hechter[5] to postulate that delayed menstruation "might, in fact, occur despite normal hormone secretion and be due to abnormally decreased vascular responsiveness." Furthermore, they pointed out that the advent of acetylcholine into the picture of the physiologic mechanism of the menstrual cycle established a presumptive relationship between the cyclic bleeding and the parasympathetic division of the autonomic nervous system, a relationship which serves to explain the sensitivity of the cycle to mental and emotional disturbances.

In an attempt to clinically substantiate their theory, Soskin, Wachtel and Hechter undertook to treat pharmacologically, by means of a nonspecific agent, selected cases of delayed menstruation. Choice of a nonspecific agent was dictated by the desire to safely increase the acetylcholine content of the uterine tissues. Since acetylcholine itself was deemed too toxic, recourse was had to prostigmin methylsulfate because of its ability to mobilize the acetylcholine reserves of the body by inhibiting the hydrolytic action of the acetylcholine esterase. A total of forty-eight cases of delayed menstruation were reported in their study. Of these, twenty-five were nongravid cases with no evidences of endocrine or pelvic disorders. All of these cases bled consequent to prostigmin therapy. The remaining twenty-three cases, previously diagnosed as being definitely gravid, did not respond in any way to prostigmin. The authors concluded, therefore, that, barring endocrine dysfunction or local organic changes, prostigmin could be used "as a combined treatment for menstrual delay and a therapeutic test for pregnancy."

Subsequently, Winter[6] reported upon a series of four cases treated with prostigmin and concluded that the drug was of no value as a pregnancy test. However, an independent analysis of Winter's results, as limited as they were, tended to refute his conclusions and support that of Soskin, Wachtel and Hechter.

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[*] Read before the Monthly Staff Conference of Caledonian Hospital, Brooklyn, N. Y., Oct. 19, 1942.

[1] Reynolds, S. R. M.: Acetylcholine Content of Uteri before and after Administration of Estrin to Ovariectomized Rabbits. J. Physiol., 95:258-268, March 14, 1939.

[2] Markee, J. E.: Anaylsis of Rhythmic Vascular Changes in Uterus of Rabbit. Am. J. Physiol., 100:374-383, April, 1932.

[3] Compen, H. W. M.: Thesis De Invloed van Menformon op di Baarmoeder. Amsterdam, 1933.

[4] Hechter, O., Lev, M. and Soskin, S.: Relation of Hyperemia to Action of Estrin. Endocrinology, 26:73-79, Jan., 1940.

[5] Soskin, S., Wachtel, H. and Hechter, O.: Prostigmin Methylsulfate; Treatment of Delayed Menstruation; with Therapeutic Test for Early Pregnancy. J. A. M. A., 114: 2090-2091, May 25, 1940.

Motivated by the theoretical considerations outlined above, by the paucity of evidence either for or against the results obtained by Soskin et al and above all by the dictates of practical therapeutics, I undertook to investigate the reported efficacy of prostigmin along the lines laid down by the original investigators. Prior to the initiation of the study, however, a search through the literature was instituted in an effort to determine the extent and character of the side reactions to be anticipated, with particular emphasis upon abortion consequent to the use of prostigmin. The evidence[7,8,9] points overwhelmingly to the conclusion that prostigmin might be administered with impunity in all stages of pregnancy.

In the present study no attempt was made to select the cases which would be expected to respond, a priori, to prostigmin therapy. Any woman complaining of a delay in menstruation was deemed a satisfactory candidate for the investigation, despite the fact that the rigid criteria established by Soskin et al. would preclude the use of the drug in cases of endocrine dysfunction and local pelvic pathology. In fairness to the original investigators, however, no attempt has been made to judge the efficacy of prostigmin either as a treatment for delayed menstruation or as a test for pregnancy, except in terms of these criteria.

In the main, all cases received three injections on three consecutive days, of 2 cc. of the 1:2000 solution of prostigmin methylsulfate. There were, all told, sixty individual patients and sixty-five instances of amenorrhea treated in this study, the results of which are recorded in the following tables 1 and 2. In order to avoid ambiguity in the discussion of these instances, they will hereinafter be regarded as individual cases.

COMMENT

The most important aspect in the problem of delayed menstruation and the common denominator in all of the cases reported in this work is the anxiety induced in the patient by the question of pregnancy. Each of the cases, whether married or single, was secretly or expressedly concerned with the possibility of being gravid and was motivated to seek professional advice by that concern. Under the circumstances, therefore, the use of prostigmin in these cases appeared to present the signal advantage of a two-fold action, in that it would either reveal the existence of gravidity or would induce the menstrual flow. This concept was borne out by the results of the present study.

In the series of 65 cases studied, 26 were not affected by prostigmin therapy and were, therefore, assumed to be pregnant, an assumption substantiated by subsequent follow-up. All of the remaining thirty-nine nonpregnant cases bled after prostigmin therapy but in three of these, namely, cases 7, 19 and 21, induction of the menstrual flow was delayed for 14, 21 and 24 days respectively, following the last injection. The length of these delays appeared to preclude the possibility of relating the flow to the therapy and in consequence, the response in these cases was considered unsatisfactory.

However, on analysis, it was revealed that case 19 had a uterine fibromyoma which necessitated hysterectomy within two months after the test and case 21 was lactating and nursing a three months old infant. In conformity with the criteria established by the original investigators, therefore, these cases could not be regarded as suitable for the test and cannot be considered as failures. In fact, case 21 subsequently experienced a menstrual delay which responded promptly to prostigmin therapy. Case 7, on the other hand, had neither endocrine dysfunction nor local pelvic pathology and must, accordingly, be regarded as a failure.

It is interesting to note that in cases 40 and 59 the results of the prostigmin test and the Aschheim-Zondek test were at variance with each other and that the follow-up confirmed the existence of the pregnancy revealed by the prostigmin test. In other words, the prostigmin test was correct in two instances in which the Aschheim-Zondek test failed. In addition, it is pertinent to point out that cases 25 and 31 bled in response to prostigmin therapy when nonpregnant, and failed to bleed when the causal factor underlying the delay was pregnancy.

In recapitulation, gravidity was definitely established in 100 per cent of the 26 cases shown to be pregnant by the prostigmin test. In the nonpregnant group, discounting endocrine dysfunction and local pathology, 36 out of 37 cases or 97.4 per cent bled, following prostigmin therapy.

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6. Winter, A.: Prostigmin of no Value as Pregnancy Test. Correspondence. J. A. M. A., 115:2103-2104, Dec. 14, 1940.

7. Schofer, R.: Use of Prostigmin in Prophylaxis and Therapy of Postoperative Intestinal Atony. Med. Welt, 6:1246, 1932.

8. Spoto, P.: Experimental and Clinical Studies Concerning Prostigmin. Boll. d. Soc. piedmontese di ostet. e ginec., 2:404-412, 1934.

9. Tietze: Intravenous Use of Prostigmin. Deutsche med. Wchnschr., 60:402, 1934.

Table 1. *Prostigmin in Delayed Menstruation Due to Causes Other Than Pregnancy*

Name, Age, Marital Status	*Past History*	*Delay in Days*	*Physical Status*	*A-Z Test*	*Prostigmin Therapy*	*Remarks and Follow-Up*
1. A.B., 29, M-8.5 yrs.	Last pregnancy 6 yrs. ago—Menses irregular	12	6/27/41 c—h & s	6/30 Neg.	6/27-28-30 3x2cc	Started to menstruate 7/1
2. C.B., 49, M-28 yrs.	Menses regular q. 28 days.	17	9/10/41 Uterus not large c—L & h	9/9 Neg.	9/10-11-12 3x2cc	Started to menstruate 9/13
3. M.B., 36, S	Menses regular.	3	2/1/41 Obese, 176 lbs.	......	2/1-2-3 3x2cc	Started to menstruate 2/4
4. M.C., 25, M-5 yrs.	Para-II—Menses regular.	11	1/20/41 c—h & s	1/30 Neg.	1/20-21-22 3x2cc	Started to menstruate 1/30
5. V.D., 35, M-11 yrs.	Para-II—Menses regular q. 28 days.	11	10/27/41 Uterus is large Obese, 206 lbs.	......	10/27-28 2x2cc	Started to menstruate 10/29 following second injection
6. J.D., 29, M	Last pregnancy 4 yrs. ago—Menses regular q. 28 days.	1	....	......	12/13-14 2x2cc (1:4000 sol.)	Started to menstruate 12/15 following second injection
7. J.D., 19, S	Menses regular.	18	6/30/41 c—s & h Breast signs neg.	7/16 Neg.	6/30-7/1-2 3x2cc	Started to menstruate 7/16
8. A.F., 40, M-16 yrs.	Para-III—Menses regular.	5	10/30/41 c—L & S	......	10/30-31-11/1 3x2cc	Started to menstruate 11/2
9. R.F., 45, M-23 yrs.	Para-V—Last birth 12 yrs. ago—Menses regular q. 24 days.	18	....	10/15 Neg.	10/10-11-12 3x2cc	Started to menstruate 10/15
10. H.F., 34, M-11 yrs.	Gravid-O—Menses regular—Last regular menses 5/17/41—A few stains on 7/27-7/29	48	8/1/41 c—s & h Breast signs neg.	8/1 Neg.	8/1-2-3 3x2cc	Started to menstruate 8/4. Flow lasted until 8/11
11. C.G., 44, M-25 yrs.	Para-XII. Menses regular—No menopausal signs.	17	2/10/41 Uterus & c L Obese, 231 lbs.	2/17 Neg.	2/10-11-12 3x2cc	Started to menstruate 2/14
12. J.G., 26, M	Menses regular q. 28 days—Last birth 12/13/40.	20	7/8/41 c—s & h	7/14 Neg.	7/8-9-10 3x2cc	Started to menstruate 7/17
13. M.H., 33, M	Menses regular q. 28 days—One left ectopic pregnancy.	6	10/8/41 c—s & h	10/8 Neg.	10/8-9-10 3x2cc	Started to menstruate 10/12
14. M.H., 37, M	Para-IV. Menses regular.	10	2/31/41 c—s & h	......	2/13-14-15 3x2cc	Started to menstruate 2/16. Flow lasted until 2/21
15. H.K., 21, M	Menses regular q. 28 days—Gravid-O.	5	....	......	1/3-4-5 3x2cc	Started to menstruate 1/8
16. C.K., 32, M	Menses regular, Para-II.	29	6/26/41 c—L & S	6/27 Neg.	6/27-28-29 3x2cc	Started to menstruate 7/1
17. M.K., 34, M	Para-II. Menses regular.	3	4/28/41 Vag. exam. neg. Wssrmnn. neg.	......	4/28-29-30 3x2cc	Started to menstruate 5/1
18. A.L., 25, M-4 yrs.	Para-I. Menses regular q. 28 days.	4	8/21/41 c—s & h	......	8/21-22-23 3x2cc	Started to menstruate 8/24
		8	11/8/41 c—L & s	......	11/8-9-10 3x2cc	Started to menstruate 11/11
19. M.M., 42, M	Para-VIII. Last pregnancy 8 yrs. ago. Menses regular.	9	4/11/41 c—s & h	......	4/11-12-13 3x2cc	Started to menstruate 5/4. On 5/26 still bleeding from uterus. Hysterectomy performed 6/6 because of bleeding. Postoperative diag. fibromyoma of uterus
20. H.M., 21, S	Irregular menses.	5	....	......	2/6-7-8 3x2cc	Started to menstruate 2/10
21. L.M., 43, M-22 yrs.	Para-VII. Last baby 3/41—Nursing baby—Menses regular q. 28 days.	7	6/20/41 c—s & h	7/11 Neg.	6/20-21-22 3x2cc	Started to menstruate 7/16
		3	12/26/41 c—s & h	12/31 Neg.	12/26-27-28 3x2cc	Started to menstruate 1/1/42
22. E.O'C., 25, S	Menses regular q. 28 days.	14	2/28/41 c—s & h	3/1 Neg.	3/1-2-3 3x2cc	Started to menstruate 3/4
23. L.P., 20, S	Exposure 9/25/40. Menses irregular. Similar period of amenorrhea 6 yrs. ago.	71	12/28/40 c—s & h Breast signs neg. Abd. signs neg.	¼ Neg. Blood serum neg.	12/28-29-30 3x2cc	Started to menstruate 1/7
24. L.P., 36, M-16 yrs.	Para-II. Menses irregular.	22	7/7/41 c—s & h	7/10 Neg.	7/7-8-9 3x2cc	Started to menstruate 7/10

Name, Age, Marital Status	*Past History*	*Delay in Days*	*Physical Status*	*A-Z Test*	*Prostigmin Therapy*	*Remarks and Follow-Up*
25. E.R., 21, M	Menses regular q. 30 days—Gravid-O.	5	10/16/41 c—s & h	10/17 Neg.	10/16-17 2x2cc	Started to menstruate 10/18 following second injection
26. E.R., 45, M	Para-X. No menopausal signs—Menses regular q. 28 days.	7	7/16/41 Cervix ulcerated & s & h	......	7/16-17-18 3x2cc	Started to menstruate 7/20
27. C.S., 33, M-11 yrs.	Gravid-O. Oophorectomy 15 yrs. ago—Menses regular.	9	9/18/41 c—s & S	9/23 Neg.	9/18-19-20 3x2cc	Started to menstruate 9/21-9/25
28. M.S., 27, M-7 yrs.	Para-III. Menses regular.	4	....	......	12/10-12/12 2x1cc	Started to menstruate 12/11 after first injection
29. L.S., 22, M	Gravid-O. Menses regular.	25	6/23/41 c—s & h	6/28 Neg.	6/24-25-26 3x2cc	Started to menstruate 7/4
30. E.S., 24	Diabetes mellitus.	10	6/28/41 c—s & h	......	6/26-27-28 3x2cc	Started to menstruate 6/29 Signs of bleeding appeared after second injection
31. I.W., 19, M	Para-I. Last baby 4/19/41.	10	....	7/8 Neg.	7/1-2-3 3x2cc	Started to menstruate 7/10
32. L.K., 25, M	Menses regular, Para-III.	15	1/19/42 c—L & S	......	1/19 1x2cc	Started to menstruate 1/20 following first injection
33. R.DiC., 21, M	Menses irregular. Gravid-O.	13	12/1/42 c—s & h	......	12/1-2 2x2cc	Started to menstruate 12/3 following second injection
34. H.M., 41, M	Menses regular q. 28 days—Para-I.	56	12/9/41 c—L & S	12/16 Neg.	12/9-10-11 3x2cc	Started to menstruate 12/12
35. F.C., 27, M	Menses regular. Nursing last baby 4/20/41.	8	12/5/41 c—h & s	12/5 Neg.	12/5-6-7 3x2cc	Started to menstruate 12/8
36. A.P., 24, M	Last pregnancy 11/1/41—Stopped nursing baby 12/1/41. Menses previously regular.	6	1/15/42 c—s & h	1/23	1/15-16-17 3x2cc	Started to menstruate 1/25
37. A.E., 32+, M-5 yrs.	Menses regular q. 28 days—Para-O.	4	12/24/41 c—s & h Normal ovaries, tubes and uterus	......	12/24-25-26 3x2cc	Started to menstruate 12/26 on evening following last injection

Table 2. *Delayed Menstruation Due to Pregnancy*

Name, Age, Marital Status	*Past History*	*Delay in Days*	*Physical Status*	*A-Z Test*	*Prostigmin Therapy*	*Remarks and Follow-Up*
25. E.R., 21, M	Menses regular q. 30 days.	9	8/9/41 c—s & h Breast signs pos. No nausea or emesis	8/17 Pos.	8/9-10-11 3x2cc	Did not bleed Definitely pregnant Had abortion done
31. I.W., 19, M-2 yrs.	Menses regular. Last baby 4/19/41.	13	9/6/41 c—h & s	9/9 Pos.	9/6-7-8 3x2cc	Did not bleed Had abortion done
38. M.A., 27, M-3 yrs.	Para-O. Menses regular.	14	1/27/41 c—s & h Breast signs neg. 2/18/41 c—L & S Breasts pos.	......	1/27-28-29 3x2cc	Did not bleed Gave birth to boy 9/30
39. E.B., 36, M	Para-I. Menses regular.	10	10/1/41 c—L & S Has uterine fibroids	10/10 Pos.	10/1-2-3 3x2cc	Did not bleed Definitely pregnant
40. M.B., 25, M	Gravid-O. Regular menses except for one occasion 6 yrs. ago when single.	35	1/8/41 Breasts engorged No signs of pregnancy 1/14/41 c—h & s	1/13 Neg.	1/9-10-11 3x2cc	Did not bleed Gave birth 8/14
41. M.C., 17, S	Menses regular. Was exposed and appears suspicious of pregnancy.	76	7/21/41 Breasts enlarged Hymen intact. No nausea or emesis. 8/1/41 Montgomery follicles & colostrum pres.	7/31 Pos.	7/21-22-23 3x2cc	Did not bleed Definitely pregnant

Name, Age, Marital Status	*Past History*	*Delay in Days*	*Physical Status*	*A-Z Test*	*Prostigmin Therapy*	*Remarks and Follow-Up*
42. M.A.C., 34, M	Menses regular. Wassermann neg. Last pregnancy 15 yrs. ago. Para-II.	41	12/27/40 c—L & h No nausea or emesis	......	12/27-28-29 3x2cc	Did not bleed 2/24/41 fetal souffle audible 7/13/41 delivered
43. D.D., 31, M	Menses regular q. 28 days—Para-III.	61	9/18/40 c—s & S No nausea or emesis	9/22 Pos.	9/18-19-20 3x2cc	Did not bleed 10/27/40 uterine souffle audible 4/3/41 delivered
44. J.D., 34, M-15 yrs.	Para-IV. Menses regular—1 miscarriage.	17	7/1/41 No nausea or emesis	7/21 Pos.	7/1-2-3 3x2cc	Did not bleed Definitely pregnant
45. C.F., 30, M-2 yrs.	Primipara. Thyroid goitre—Menses irregular and scanty. Nervous.	87	....	......	6/1-2 2x2cc	Did not bleed 7/11/40 uterine souffle audible. 12/1/40 delivered male infant
46. E.G., 42, M	Menses regular q. 28 days.	59	5/29/40 c—L but h Obese, 176 lbs.	......	5/29-30-31 3x2cc	Did not bleed 9/16/40 uterine souffle audible. 12/7/41 delivered female infant
47. M.G., 33, M	Aborts habitually. Has had 9 miscarriages. Menses regular q. 28 days.	33	10/16/40 c—L & h Obese, 213 lbs.	10/27 Pos.	10/16-17-18 3x2cc	Did not bleed 3/28/41 miscarried Macerated fetus, about 4-5 mo. gestation size
48. A.K., 33, M-10 yrs.	Para-II. 1 miscarriage 3 yrs. ago.	33	7/10/41 c—h & s Breast signs neg. No nausea or emesis. 7/17 c still s & h	7/22 Pos.	7/10-11-12 3x2cc	Did not bleed Definitely pregnant
49. J.M., 25, M-2 yrs.	Menses regular q. 28 days.	8	9/2/41 c—s & h Obese, 182 lbs.	9/14 Pos.	9/2-3-4 3x2cc	Did not bleed Definitely pregnant
50. M.P., 26, M-2 yrs.	Menses regular q. 28 days—2 mos. gestation a year ago. Gravid-1—Para-O.	39	10/11/41 c—s & h Uterus not large	11/7 Pos.	11/10-11-12 3x2cc	Did not bleed Definitely pregnant
51. H.P., 40, M-14 yrs.	Menses regular. Para-II.	11	....	2/22 Pos.	2/20-21-22 3x2cc	Did not bleed Delivered 10/41
52. R.R., 27, M-1 yr.	Para-I. Menses regular.	30	1/3/41 c—S & enlarged	......	1/3-4-5 3x2cc	Did not bleed Delivered 9/41
53. A.S., 26, M-6 yrs.	Had 2 previous abortions—Menses regular q. 28 days.	10	6/2/41 c—s & h 7/25/41 c—L & S Breast signs pos. Uterus 2 fingers above pubes	......	6/2-3-4 3x2cc	Did not bleed Definitely pregnant
45. L.V., 18, M	Menses irregular since birth of baby in 7/40.	11	1/2/41 c—s & h 1/15/41 c—s & h Breast signs neg. 1/30/41 c—h fundus small 2/14/41 Uterus enlarged	......	1/15-16-17 3x2cc	Did not bleed Delivered 8/31/41
55. J.F., 19, M	Menorrhagia. Irregular menses.	96	12/16/40 Breast signs neg. No enlargement of uterus	12/8 Pos. 12/24 Pos.	12/16-17-18 3x1cc	Did not bleed Delivered male child 6/23/41
55. Contd.	Last birth 6/23/41.	3	1/12/42 c—s & h	1/30 Pos.	1/12-13-14 3x2cc	Did not bleed Pregnant
56. H.K., 22, M	Menses regular. Delay of 13 days in March—Premarital Wassermann neg.	46	12/16/41 c—L & S	12/17 Pos.	12/16-17-18 3x2cc	Did not bleed Definitely pregnant
57. A.S., 25, M-1.5 yrs.	Menses regular q. 28 days—Para-II.	10	1/23/41 c—s & h	1/28 Pos.	1/23-24-25 3x2cc	Did not bleed Pregnant
58. A.S., 18, M-7 mos.	Menses regular q. 28 days.	9	1/9/42 c—S & L Nausea and vomiting. Breasts large, Montgomery follicles pres.	1/13 Pos.	1/9-10-11 3x2cc	Did not bleed Definitely pregnant

59. M.R., 29, M-7 mos.	Menses irregular.	18	1/7/42 c—L & S Montgomery follicles pres. Diag. 6 weeks pregnant	1/13 Neg. 1/20 Pos.	1/7-8-9 3x2cc	Did not bleed Definitely pregnant
60. F.T., 29, M-9 yrs.	Para-II. Menses regular q. 31 days.	8	11/29/41 c—L & S	......	11/29-30 12/1 3x2cc	Did not bleed Had abortion done

CONCLUSIONS

In conclusion, it may be stated:

1. That prostigmin may be used with impunity in early pregnancy.
2. That prostigmin has proven to be effective in the treatment of delayed menstruation uncomplicated by pelvic pathology or marked endocrine dysfunction.
3. That prostigmin has proven to be effective as a test of pregnancy within the limits assigned by Soskin, Wachtel and Hechter.
4. That no untoward reactions attending the use of prostigmin were observed.

CRITERIA FOR DIAGNOSIS OF BRUCELLOSIS*

Joseph Franklin Griggs, M.D.
CLAREMONT, CALIF.

The acute form of brucellosis (undulant or Malta fever) is well known. It is characterized by a high fever, usually 102° to 105°, usually persistent for many days, weeks or months and undulating in its intensity. Perspiration is often extremely profuse. The patient may feel as if he has a severe, prolonged case of influenza or dengue fever, or he may be remarkably comfortable and clear headed for the severity of his fever.

There is usually a dearth of physical findings, but an enlarged spleen may be expected. The illness is characteristically prolonged by relapses which finally, for no apparent reason, fail to appear. This fact makes the appraisal of therapeutic measures particularly difficult. In the natural course of the acute disease remissions may be sudden or gradual, early or late, but eventual complete recovery may be expected in most cases.

The diagnostic criteria for the acute disease have been stated for a long time as follows: (1) a positive blood agglutination test, usually in a titer of 1:80 or higher; (2) a positive blood culture, which requires special methods[1]; (3) a clinical picture and course as generally described above, usually with a leukopenia relative to the fever; (4) a history of consumption of raw milk or raw milk products, handling cattle or their fresh carcasses, or exposure to Brucella in some other way as in a laboratory. For the acute form of the disease, as defined in the first paragraph, these criteria may serve to detect the majority of cases.

The chronic form of brucellosis is quite different from the acute. It does not always begin with the acute picture described above. Acute cases do frequently become chronic, but the majority of chronic cases have never presented the classic picture of acute undulant fever. Many of the chronic cases have had insidious onsets, in which it is difficult to tell when its beginnings occurred. Most of them have had acute illnesses resembling mild influenza, but not the severe disturbance which produces agglutinins in a titer of 1:80 or suggests a bacteremia.

Apparently the body does not vigorously object to the presence of brucellar germs except when there is an overwhelming infection. It seems to require a bacteremia to call forth agglutinins and other forms of active resistance in appreciable quantities. Ordinary amounts of brucellar infection are evidently not resented by the body's immunologic mechanisms, perhaps because this infection is only rarely a serious threat to life itself. Chronic brucellosis is a relatively benign disease, except for the subjective feelings of the patient who has it. In other words, the criteria for diagnosis of the acute disease are not sufficient for detection of the chronic form of the infection. It is the latter which is by far the more common of the two.

A series of one hundred cases of chronic brucellosis has been carefully recorded and analyzed. It forms the basis for this study of diagnostic criteria. The series did not include any cases in which the diagnosis was in serious doubt. The data which led to the recognition of the disease were tabulated and reported in detail in another paper. The resultant criteria can be considered applicable in a general private practice. In institutional practice even more facilities should be available.

Foshay[2] says that *"in no other infection does a correct diagnosis depend more upon comprehensive knowledge, extensive experience and sound judg-*

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*Read before a staff meeting of Tacoma General Hospital, Tacoma, Wash., Oct. 6, 1942.

[1] Poston, M. A.: Technique for Isolation of Brucella from Human Brucellosis, J. Lab. & Clin. Med., 26:1961-1965, Sept., 1941.

[2] Foshay, L.: Laboratory Diagnosis of Undulant Fever, Am. J. Clin. Path., 10:176-187, Feb., 1940.

ment in relation to epidemiologic, clinical, and laboratory findings."

1. For the first criterion of a positive diagnosis of chronic brucellosis, we may say that the patient must be really ill. As awareness of the disease increases, persons are being tested just to see if they have it. Laboratory tests will often show positive in perfectly healthy persons who have had long and constant contact with infected cattle; for example, dairy men, veterinarians, slaughterhouse employees and persons who have been raised on raw milk without becoming ill. The tests do not make the diagnosis of the disease. It can be made on those who come to see the doctor because they don't feel well, not on those who just want to be "tested."

2. A long and searching history must be taken, otherwise the disease is not likely to be suggested to the clinician's mind; or if it is always present in his mind, the history is necessary to help him differentiate it from other diseases. The typical history reveals a total period of ill health of rather long duration. The course may be an undulant one with some constant features, or it may include complete remissions to good health, interspersed between recurrent periods of vague or atypical illness. The undulant course is more common and diagnostic than the remittent.

The symptoms may be as varied as all nosology. There is no other disease unless it be syphilis, which can simulate so many other clinical conditions. It can present symptoms for each and every specialty in the field of medicine. The only symptom which is present in practically every case of chronic brucellosis is ease of fatigue in some or many of its usual manifestations. Other symptoms most commonly encountered, singly or combined, are aching or pain in muscles, nerves, joints, or bones; catarrh or postnasal drip or sinusitis or a stubborn allergy; headache; digestive disorders usually with excessive gas; and fever of a low grade. There may be many other symptoms entirely unrelated to any of these.

The history often sounds like a psychoneurosis more than anything else. One of the objects is to uncover proof of organic disease. A characteristic history presents a long period of mild ill health with frequent, more intensive attacks, in which the diagnoses are varied, atypical or frankly puzzling. Persistent, low grade fever, or recurrent repeated "flu" is most significant. Another suggestive point is the failure to improve or recover in spite of good treatment for supposed diseases which have been diagnosed. The history usually includes the use of raw milk or other exposure to the sources of brucellar infection.

3. The temperature should be taken for at least five minutes in the late afternoon daily, and a record kept of it. Many patients carry 0.4° to 1° of fever without feeling it. Fever, if present, is an important evidence of the organic nature of the patient's condition, and an indication of a probable infection of some kind. It is now well known that fever may be absent in active chronic brucellosis. After a number of years the body gives up the fever response. In about 20 per cent of our series no consistent fever record was found at the time of diagnosis or in the history. When fever is present, it should be compared with other findings, particularly the blood count. If fever is not present, the diagnosis must be well confirmed by other data.

4. Physical examination typically is negative, except for fever, or reveals insufficient findings to account for the history and symptomatology. Roentgen examination is also negative except for occasional lung or bone lesions which may be present in as many as 5 per cent of cases. The bone lesions vary, but typically are destructive of cortical tissue in a loculated manner with a relative absence of periosteal reaction.

5. The blood picture[3] may be helpful. Sometimes it has been the first finding to raise our suspicion of chronic brucellosis. It was of some diagnostic value in nearly 50 per cent of our series, but it cannot make the diagnosis alone. It may vary widely but it tends to present: (1) a relative lymphocytosis, sometimes active and absolute; (2) a relative leukopenia, and/or (3) a mild anemia with a high color index.

The blood should be taken before the skin test is given. Among the diagnostic factors the blood picture was about fifth in importance.

6. Exclusion of other probable or possible diseases is a most important part of the accurate diagnosis of chronic brucellosis. In the first place, other diseases, such as tuberculosis, rheumatic fever, arthritis, malignancy and syphilis, are likely to be dangerous. They should never be confused with their relatively benign imitator; second, other diseases are more easily proved or disproved; third, the diagnosis may correctly remain in doubt until exclusion has been systematically carried through.

Coincident conditions must also be identified and assigned their proper places, even though they are incapable of causing the total symptomatology. For example, sinusitis, allergy, cholecystitis, hypoglycemia, hypo- and hyperthyroidism, eyestrain, amebiasis and neurosis may require special treatment.

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[3] Calder, R. M., Steen, C. and Baker, L.: Blood Studies in Brucellosis, J.A.M.A., 112:1893-1898, May 13, 1939.

7. Before any skin test or vaccine is given, the power of the polymorphonuclear leukocytes to ingest living brucellar bacteria from a fresh culture is tested[4] using carefully[5] citrated blood less than six hours old. If some of the patient's cells ingest as many as 31 to 40 or more bacteria and if none of his cells fail to phagocytose some bacteria, the test approaches diagnostic significance almost in itself. More often it is just another of the laboratory tests which may add a little weight, one way or the other, to the total diagnostic synthesis.

Like the agglutination test, this opsonocytophagic test is not an index of infection but an expression of a kind of specific resistance. It is more sensitive than the agglutination test and more valuable as an indication of the activity of the body's resistance to the disease. The results of this test should be reported from the laboratory both in Huddleson's figures and by the phagocytic index number of Foshay and Le Blanc.[6] The latter converts the report into one convenient percentage figure. The opsonic or phagocytic power is usually moderately weak in chronic brucellosis. The average phagocytic index number in our series was about 20. It means that the body has met this germ before but that it does not resist it strongly.

However, there is a marked variation in the sensitivity and opsonic response in brucellosis patients. The opsonocytophagic power may also be very weak (about 3 or 6), weak (about 10 or 15), moderate (about 30 or 40) or strong (above 50). In persons who have never been infected with Brucella it is usually very weak, below 10. A test which is higher than weak may be considered significant. A very high opsonic index in a patient who is quite sick is more likely to indicate sensitivity than immunity.

The test must always be considered as only a part of an integrated diagnostic pattern. It is subject to a rather large amount of error both in technic[7] and interpretation. Of the diagnostic factors in this series it was about sixth in importance.

8. The blood agglutination test, so long relied upon for the diagnosis of the acute form of undulant fever, is the least useful of the tests in the chronic form. It is now well known to be negative in more than half the cases of active chronic brucellosis. In our series it was unquestionably positive in less than 20 per cent. However, if it is positive in any titer, it may be significant of probable brucellosis. Many laboratories report it negative unless a complete agglutination occurs in titers of 1:80 or higher. This is a mistake. The complement-fixation test may be more valuable than the agglutination test. It was not used extensively in this series. All blood tests should be done before giving a skin test or any vaccine.

9. Positive cultures of Brucella from the blood or other body fluids constitute complete proof of the disease, barring technical error. The diagnosis has been repeatedly proved in this way when all other tests were negative except the history and clinical picture. However, the germ is difficult to grow, the procedures are not easy or cheap, and the chance of success in chronic cases is apparently very slight. Cultures should be done more frequently, especially when the temperature is above 101° or when there is an apparent focus of infection. In our series one blood culture was positive out of six.

10. The intradermal is the most important of the objective tests, but is also most easily abused. It should not be given until the blood tests and fever record are completed, as it may alter them. Vaccine should not be used for the initial skin test. Huddleson's brucellergen is much milder than vaccine and may be used, but it should be diluted with nine parts of sterile physiologic saline to make a dilution of 1:120,000 for the first test. If this intradermal test is negative, stronger dilutions may be used with safety. Only if the brucellergen tests are negative, should vaccine be used intradermally, then diluted 1:4 or 1:100. A control test, using the diluent saline, should be given to compare with the first test. If other tests prove the existence of brucellosis in active form, the skin test should be omitted.

The reason for this caution is that necroses of the skin or premature desquamation of epidermis (near necrosis) are easily caused by strong concentrations of brucellar protein in sensitized persons with the disease (about 25 per cent in our series). Every time this happens the patient's sensitivity increases still further. This is not disadvantageous as to diagnosis, but it makes subsequent vaccine therapy extremely difficult. Such reactions should be scrupulously avoided by using sufficiently weak dilutions from the beginning of skin testing.

A positive skin test means that the patient is

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[4] Huddleson, I. F., Munger, M., Gould, S. E. and Paulson, D.: Study of Brucella Infection and Immunity in Humans, Am. J. Trop. Med., 17:863-880, Nov., 1937.

[5] Harris, Harold J.: Brucellosis (Undulant Fever): Clinical and Subclinical, Paul B. Hoeber, Inc. (Medical Book Dept., Harper & Bros.) New York, April, 1941.

[6] Foshay, L. and Le Blanc, T. J.: Derivation of Index Number for Opsonocytophagic Test, J. Lab. & Clin. Mod. 22:1297-1300, Sept., 1937.

[7] Angle, F. E., Algie, W. H. and Morgan, D.: Brucellosis; Studies Emphasizing Strain Variation in Serologic Testing, J. Lab. & Clin. Med., 27:1259-1263, July, 1942.

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specifically skin-sensitive to Brucella, presumably because of previous invasion by it. A positive skin test means either active infection or past healed infection, or a latent subclinical infection. The determination of present activity must depend chiefly on other diagnostic data and clinical judgment. Negative skin tests, even including a concentrated vaccine, make the diagnosis most unlikely. The skin tests were all negative or questionable in only two of our one hundred chronic cases.

The skin tests should be read by the doctor every day for four days or a week if necessary. As in the tuberculin test, most positive reactions are somewhat red, indurated and raised above the skin surface. However, a soft, flat reaction may be positive, if it persists a week beyond the control, or if it presents a petechial ecchymosis in the tested area, not due to striking a skin vessel with the needle.

11. A definitely favorable response to brucellar vaccine therapy is a strong confirmation of the diagnosis, The diagnosis may not be possible with absolute certainty until such a therapeutic test is conducted over a period of many months or years. However, brucellar vaccine therapy is difficult to administer correctly because of the necessity to avoid increasing sensitivity. This is particularly difficult with commercial vaccines as usually prepared. Vaccine therapy should not be undertaken lightly. In our series the fact of improvement after vaccine therapy was a very important criterion of diagnosis because we were collecting a group of unquestioned cases for the purpose of studying their other diagnostic characteristics. All of the cases in this series improved on specific vaccine therapy† except eight hypersensitive patients and nine new cases, relatively untreated.

There is one response to vaccine which is not favorable but which we believe is nevertheless diagnostic. It is the reaction of hypersensitivity to the extent of local tissue intolerance. If this is anticipated, it can and should be avoided. The diagnosis can and should be made without causing necrosis either in testing or in treatment.

12. Obviously the diagnosis emerges out of certain combinations of diagnostic data in any one case, not from any one or two airtight criteria. We have investigated the above ten criteria as they apply to one hundred accepted cases. Mathematically these ten criteria could occur in 967 different combinations of 3 or more. Actually, in our series there were only 37 combinations capable of making the diagnosis. Ten combinations accounted for 60 per cent of the diagnoses. These ten combinations are listed below in order of their frequency.

1. History, skin test, fever, exclusion of other disease, response to vaccine.
2. History, skin test, fever, exclusion, blood picture, response.
3. History, skin test, blood picture, response.
4. History, skin test, exclusion, blood picture, opsonic, response.
5. History, skin test, fever, response.
6. History, skin test, fever, exclusion, blood picture, opsonic, response.
7. History, skin test, fever, exclusion, opsonic, response.
8. History, skin test, fever, blood picture, opsonic.
9. History, skin test, fever, blood picture, response.
10. History, skin test, exclusion, response.

Symptomatology, duration, source and course are included in history. In individual cases the strength and significance of the criteria may differ widely from the order in which they are listed in the above combinations.

SUMMARY AND CONCLUSIONS

1. No simple rules can be laid down for the diagnosis of chronic brucellosis.

2. The requirements for diagnosis are a comprehensive understanding of the protean nature of the disease, a thorough study of the history, of the patient and of the total combination of all the diagnostic data which can be secured.

3. Each of the criteria for diagnosis is discussed and an estimation made of its value in the light of its role in the diagnosis of one hundred cases of chronic brucellosis.

4. The exclusion of other diseases occupies an important place in the certainty of the diagnosis.

5. The skin test, properly given, is the most valuable single objective test. Great care should be taken not to increase the patient's sensitivity to Brucella.

6. The agglutination test is usually the least valuable of tests for chronic brucellosis, but it should not be discarded.

7. The laboratory offers no test or tests which can substitute for thorough study and keen, comprehensive, clinical judgment.

8. The basic work for this paper appears to confirm the newer concept of brucellosis in man as a specific infectious disease, whose symptoms and immunologic features are more varied and inconstant than have ever been known before.

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†In the latter part of this series and always for desensitization we used an oxidized Brucella abortus and suis vaccine prepared by Drs. Lee Foshay and Wm. Hesselbrock of Cincinnati and kindly supplied by them. The preparation is described in detail in the American Journal of Public Health for October, 1942.

STATE SECTIONS

OREGON STATE MEDICAL SOCIETY

SIXTY-NINTH ANNUAL MEETING
1943

ORGANIZATION ACTIVITIES

The Council met October 3 in Portland. Nomination of a member of the Board of Trustees of the Medical Research Foundation sponsored by the Portland Academy of Medicine was discussed. It was concluded to refer this matter to the Executive Committee with power to act.

Wilson Johnston, State Advisory Chairman to the Procurement and Assignment Service, presented an up-to-date report of the number of physicians who have entered the Army and Navy Medical Corps.

Approval was given to the publication of a news bulletin containing "gossip" concerning the activities of members serving with the armed forces. It was suggested that such news might be incorporated in the Oregon section of Northwest Medicine.

U. OF O. MEDICAL SCHOOL

Medical Students' Finances

Another partial solution to the finance problem of medical students has been realized in a new loan grant from the United States office of education. The government has made available a $22,000 loan for students hard pressed for funds because they had no opportunity to earn school expenses the past summer. Instead, they stayed with their school books under the accelerated medical program.

Student interest shown in the loan prompted college administrators to predict the loan would be depleted within ten days. Students of any year's enrollment may apply for the loans, differing from the earlier announced Kellogg loan fund which was available to upper class students only.

But the loan funds have not solved the financial problem of students and Acting Dean David W. E. Baird continues to press the facts before education leaders. Average loan now being received by students is $500. Average cost of a year of medical education is $1000 to $1200. The plight is obvious.

The Postgraduate Session

The University of Oregon medical school's annual program of postgraduate sessions will be restricted this year in the light of wartime conditions, Dr. Baird announces. The March general session, always an outstanding medical event for Northwest doctors, has not been decided definitely "out" or "in." The alumni association of the medical school has sponsored the session in the past and its decision must be forthcoming. But the door will be left open sufficiently wide to allow the school to present any outstanding medical attraction which might come Portland's way.

Depleted Faculty

Growing realization that medical school faculties must be maintained is indicated in letters received at the medical school from Washington, D. C. From time to time the school has informed national agencies of its "dispensables" and "indispensables" among doctors. Recently these agencies replied, urging the school to make more of its doctors "indispensables" in order that an adequate faculty may be kept. The Oregon Medical School's faculty has already been depleted by more than one hundred physicians.

STATE BOARD OF MEDICAL EXAMINERS

Frank E. Fowler, former president of the Board of Medical Examiners, has taken a leave of absence and is now on active duty with the United States Army Medical Corps with a commission as Major. Edward H. McLean of Oregon City has been appointed by Governor Charles A. Sprague as member pro tem of the Board and at an October meeting H. L. Blosser of Portland was elected president to succeed Dr. Fowler.

The Board also canvassed the grades of the regular examination held in July and confirmed issuance of licenses to practice medicine and surgery to the following successful candidates, several of whom are now in military service: George Whitaker Taylor, David Arthur Morris, Laurence Kidder MacDaniels, Leonard Dale Jacobson, John Joseph Krygier, Lewis Duncan Clark, Don Richard Paull, Woodrow Murphy, Richard Hill O'Donnell, James Edwin Hyatt and Keith Daniel McMilan.

Licenses to practice medicine and surgery, based on reciprocity with several states or endorsement of National Board Certificates, were also issued to the following: Major Cecil Walker Dingman, retired; Charlotte Louise Meller, formerly of Minnesota and now located with the Student Health Service at Oregon State College; Rosa Caldwell Turnbull Powell, formerly of California and now located near Grants Pass; Gardner Shepard Stout of Portland, stationed in Portland with the United States Navy; Ira Maxwell Unsell, now on active duty with the United States Army; and Jesse Charles Woodward, now located at Denver, Colorado. Licenses to practice osteopathy were also issued to Edward Vernon Chance, formerly of California, and Paul Trevaskis Rutter, formerly of Jal, New Mexico, and now on active duty with the Dental Corps of the United States Army.

The Board is particularly interested in allocation of newly-licensed physicians during the emergency to the end that every community may be as fully serviced as possible, and under the direction of Dr. Irvin R. Fox of Eugene is cooperating with the State Advisory Committee to the Procurement and Assignement Service in an effort to evolve a program which will accomplish this purpose.

Mr. Alvin Rea, former investigator for the Board, has resigned and his duties have been temporarily assumed by Miss Lorienne M. Conlee, executive secretary and legal adviser to the Board. The next meeting of the Board will be held in January, at which time examinations in medicine and surgery and osteopathy will also be continued.

SOCIETY MEETINGS

CENTRAL WILLAMETTE MEDICAL SOCIETY

For its meeting on October 8, Central Willamette Medical Society was invited to Camp Adair near Corvallis. An inspection tour of the Camp was made followed by dinner, at the close of which a scientific program was presented by the Camp medical staff.

LANE COUNTY MEDICAL SOCIETY

The October meeting of Lane County Medical Society was held jointly with the staff of Sacred Heart Hospital at Eugene October 19. Dinner at the hospital was followed by a scientific program provided by the program committee of the hospital staff.

LINN COUNTY MEDICAL SOCIETY

The monthly meeting of Linn County Medical Society was held October 22 at the Albany Hotel. J. C. Booth presented a report of the actions taken by the House of Delegates of Oregon State Medical Society at the annual session in Portland in September. Mr. Willard C. Marshall, General Manager of the Physicians and Surgeons Hospital Association, discussed the future plans of the Association.

MULTNOMAH COUNTY MEDICAL SOCIETY

Multnomah County Medical Society met October 9 at the Nurses' Home of Good Samaritan Hospital in Portland. The scientific program aranged by the program committee of the hospital staff consisted of presentation on "Physiology of the Gallbladder" by H. F. Haney, "Medical Treatment of Gallbladder Diseases" by Charles P. Wilson and "Surgical Treatment of Gallbladder Disease" by Martin A. Howard.

UMATILLA COUNTY MEDICAL SOCIETY

Umatilla County Medical Society met in joint session with the medical staff of the Pendleton Air Base October 13. The program was preceded by a social hour in the officers' club at the Base and a steak dinner. A complete "ward round" of all the hospital unit buildings was then made. The program consisted of talks by Captain Keiser and Lieutenant Smith on the officers' training courses as given at Carlisle Barracks, Pennsylvania, and a brief discussion by Major Teall, flight surgeon at the Base, of flight surgeon training as offered at Randolph Field, Texas.

DIABETES SHOULD BE STRICTLY CONTROLLED

An additional reason why diabetes should be kept under strict control is suggested by a report by James R. Lisa, M.D.; Morton Magiday, M.D.; Irving Galloway, B.S., and James Finlay Hart, M.D., New York, in *The Journal of the American Medical Association* for September 19, that arteriosclerosis or hardening of the arteries is more common in diabetic than in nondiabetic persons. Their findings were based on a postmortem study of 193 diabetic and 2,250 nondiabetic patients.

Among their other findings are that arteriosclerosis is more frequently severe in diabetic than in nondiabetic persons; severe arteriosclerosis is more frequent among persons with diabetes at all ages, and that "sclerotic (hardening) changes in both the diabetic and the nondiabetic person increase in frequency as age advances, but among persons with diabetes a given frequency of these cchanges is reached about ten years earlier than those without it . . ."

OREGON PHYSICIANS IN WAR SERVICE

The following list enumerates Oregon physicians who have been commissioned in Army and Navy service as of date October 31, 1942. *Names with asterisk are members of the Oregon State Medical Society,

ARMY

Abele, J. F., Portland
Abrams, E. W., Portland
*Adams, J. M., Klamath Falls
*Arhlen, H. L., Portland
*Alden, W. H., John Day
*Allen, Roland, Portland
*Allison, S. D., Portland
*Anderson, E. M., Portland
*Anderson, N. P. E., Eugene
*Atkins, C. B., Portland
*Bailey, Paul, Portland
*Bain, L. M., Albany
Bain, W. W., Albany
Baker, R. L., Gaston
Barlow, H. H., Salem
Barr, J. R., Portland
Baughman, H. E., Salem
*Baum, W. W., Salem
Begg, R. E., Portland
*Belknap, H. D., Portland
Bennett, W., Portland
*Berg, R. F., Portland
Berger, S., Warm Springs
*Biswell, R., Jr., Baker
*Black, N. F., Klamath Falls
*Blair, H. C., Portland
Boak, R. T., Portland
Boals, R. T., Jr., Portland
*Bolton, W. M., Portland
*Boylen, E. L., Portland
*Bradley, J. A., Eugene
*Bree, D. W., Portland
*Broun, J. R., Portland
Browning, C., Portland
Brunkow, M. D., Portland
*Buren, W. E., Salem
*Burns, E. M., Portland
Cales, J. K., Portland
*Campbell, C. S., Salem
*Campbell, J. E., Roseburg
Cane, W. M., Oswego
*Caniparoli, S. D., Portland
Carter, Richard, Portland
*Cash, G. C., Burns
Chandler, W. J., Woodburn
*Chapman, W. H., Eugene
*Chauncey, L. R., Portland
Chernenkoff, P. W., Bend
Chronovsky, V., Prairie City
*Clisby, K. M., Portland
Codd, P. B., Tillamook
*Coffen, C. W., Portland
Coffey, R. M., Salem
*Cohen, William, Portland
*Collie, W. J., Portland
Collier, P. E., Portland
Compton, A. M., Portland
Cottrell, G. W., Portland
Coughlin, J. J., Portland
Coyle, C. L., Medford
*Cronin, J. M., Klamath Falls
*Currin, H. B., Klamath Falls
Currin, Richard, Portland
*Daniels, J. Q. A., Portland
*Davis, J. B., Portland
*Davis, M. C., Klamath Falls
*Davis, T. A., Portland
Davis, W. W., Portland
*Dehne, J. E., Coquille
*Diack, A. W., Portland
*Diack, S. L., Portland
*Dietrich, F. S., Portland
Dobbin, H. W., Portland
Done, R. W., Portland
Douglas, E. W., Portland
*Douglas, V. A., Salem
*Dowsett, J. W., Portland
*Dubois, E. D., Portland
Dunham, Thomas, Salem
*Durham, M. W., La Grande
Ebner, C. J., Mount Angel
Eddy, L. L., The Dalles
Edelson, Z. C., Nyssa
*Emerson, H. C., Portland
*Espersen, R. W., Klamath Falls
*Evans, J. W., Portland
Everett, E. G., Ashland
*Farley, T. F., Klamath Falls
*Feves, L. J., Pendleton
*Fisher, A. A., Lebanon
*Fixott, R. S., Portland
*Forster, D. E., Portland
*Foster, R. N., John Day
*Fowler, F. E., Astoria
Fox, T. J., Portland
Francis, H. M., Corvallis
*French, A. J., Marshfield
*Gantenbein, C. E., Portland
*Gardner, E. L., Eugene
Gentle, H. T., Medford
Gilpin, B. B., Jr., Medford
*Goodnight, S. H., Portland
*Gould, R. J., Portland
*Grant, C. A., Baker
*Gregson, W. E., Portland
Grorud, P. R., Portland
Halboth, D. J., Medford
*Hale, W. W., Portland
*Hamilton, N. E., Portland
Haslinger, J. F., Portland
Haun, J. J. D., LaGrande
*Haworth, J. B., Portland
Hedlund, C. J., Baker
Heffron, C. E., Portland
Heldobler, A. O., Portland
*Hemingway, M. W., Bend
*Henton, G. H., Portland
*Hess, O. R., Roseburg
*Herren, R. Y., Portland
Himelfarb, Max, Portland
*Hoffman, S. J., Eugene
*Hollenbeck, W. F., Portland
*Illge, A. H., Portland
Inderlied, Herman, Portland
Johnson, G. H., Portland
*Jones, A. C., Portland
*Kaufman, R. H., Portland
*Keizer, J. P., North Bend
*Kerbel, A. J., Astoria
Kerby, K. E., Nyssa
Kerron, S. M., Eugene
*Kessler, R. L., Portland
*Kuhn, C. W., Portland
*Kullberg, R. W., Astoria
*Kurtz, F. H., Salem

*Kuykendall, John, Eugene
Lage, G. H., Portland
*Larson, V. C., Eugene
*Lawson, E. L., Portland
Lee, G. F., Portland
Lemery, G. W., Jr., Cloverdale
*Lewis, H. D., Hood River
*Lewis, H. P., Portland
*Lind, L. P., Portland
*Littlehales, C. E., Portland
Lloyd, R. W., Portland
Loehner, C. A., Salem
*Lowell, L. M., Astoria
Lyman, Richard, LaGrande
*Macdougall, W. H., Oswego
*Manlove, C. H., Portland
Marbut, W. M., Echo
*Mason, H. E., Beaverton
*Massey, G. D., Klamath Falls
*Mathews, T. J., Oregon City
McBride, W. C., Jr., Portland
McConnell, J., Seaside
*McDonald, D. C., Portland
McGraw, L. S., Mollala
*McKelvey, G. J., Baker
McKim, C. P., Baker
McMahon, R. A., Portland
*Menkel, C. B., Sheridan
Merryman, G. H., Jr., Klamath Falls
*Miller, J. L., Jr., Portland
*Miller, R. F., Portland
*Miller, V. W., Salem
Mills, V. D., Portland
*Montgomery, T. R., Portland
Morris, D. A., Eugene
*Moore, W. J., Grants Pass
*Mount, F. R., Portland
Munroe, W. R., Portland
Neils, J. K., Portland
*Nerseth, M. A., Klamath Falls
Nichol, B. A., Portland
*Nielsen, W. E., Portland
Oliver, J. B., Portland
*Packard, F. B., Portland
*Page, W. J., Dallas
Parcher, R. W., Portland
*Parks, E. W., Portland
*Pasto, George, Portland
*Pease, B. N., Portland
*Perlman, Frank, Portland
*Phillips, O. S., Bend
*Piercy, W. H., Hillsboro
Pitt, J. O., Portland
*Pollock, R. W., Halfway
*Power, F. K., Salem
*Prag, R. M., Portland
Puziss, Abe, Portland
*Rademacher, C. J., Bend
*Rafferty, F. W., Astoria
*Rankin, J. S., Portland
Rawls, N. B., Portland
Ray, G. L., Portland
*Ray, L. F., Portland
Reed, R. J., Portland
Reikle, Raymond, Portland
Rich, D. R., LaGrande
Rich, R. I., Woodburn
*Riedel, H. F., Portland
*Ritteman, G. W., Salem
*Robb, M. J., Bend
*Robbins, C. W., Eugene
*Roberts, J. M., Portland
*Robinson, E. G., Portland
*Rogers, J. L., Portland
*Rogers, R. S., Junction City
Rosenberg, A. J., Portland
*Ross, W. K., LaGrande
Ross, W. T., McMinnville
*Russell, J. P., Grants Pass
Ruuska, P. E., Portland
Sandlin, Dean, Portland
*Saunders, G. C., Portland
*Scales, K. J., Portland
*Schneider, Leo, Portland
*Schuster, E. J., Tillamook
*Seabrook, D. B., Portland
*Searing, D. H., Monmouth
*Seeley, J. R., Marshfield
*Sharp, P. W., Klamath Falls
Shasky, Florian, Portland
Shields, A. B., Portland
*Short, F. A., Portland
Shuey, H. E., Cottage Grove
*Sicbel, M. S., Portland
*Simons, Max, Portland
Singer, I. M., Portland
Sleeter, R. W., Medford
*Slocum, D. B., Eugene
*Smith, C. H., Portland
*Smith, G. K., Portland
*Sneeden, V. D., Portland
*Snow, E. W., Portland
*South, F. F., Portland
*Stanard, D. C., Eugene
*Steffanoff, D. N., Portland
Steward, J. B., Portland
*Strohm, J. G., Portland
*Sturdevant, C. O., Portland
Suckow, G. R., Portland
*Sullivan, A. W., Portland
Sundquist, E. L., Springfield
*Swanson, M. H., Klamath Falls
Ten Eyck, T. G., Portland
Thompson, L., Portland
*Thorstenberg, E. S., Grants Pass
*Trommald, J. P., Portland
Tuhy, J. E., Portland
Tupker, E. P., Salem
*Ullman, E. V., Portland
*Underwood, F. J., Portland
*Vogt, P. R., The Dalles
*Wall, E. G., Prineville
*Warnell, Charles, Portland
Wells, H. A., Redmond
White, J. B., Portland
*Wilbur, R. S., Grants Pass
Wilbur, W. I., Carlton
*Woolcott, F. L., Portland
*Woods, B. O., Portland
Woods, C. A., Ashland
*Yost, C. W., Portland
*Zener, F. B., Portland

NAVY

*Adix, H. V., Jr., Portland
*Alvis, H. J., McMinnville
*Bailey, B. G., Grants Pass
*Berger, E. H., Portland
Boyer, J. M., Portland
*Brown, H. J., Tillamook
*Bueermann, W., H. Portland
*Cheetham, J. G., Portland
*Chisholm, W. P., Lakeview
*Enkelis, J. J., Portland
Enos, R. W., Portland
*Gevurtz, W. S., The Dalles
*Haworth, W., Portland
Hayter, Robert, Portland
Hockett, V. E., Salem
*Holcomb, Roger, Portland
*Hutchens, W. H., Portland
*Johnson, A. N., Roseburg
*Johnsrud, R. L., Portland
*Jones, L. T., Portland
*Jones, R. F., Redmond
*Kabeisman, F. J., Hillsboro
*Keane, R. H., Portland
*Kelsey, W. L., Portland
Kennedy, M. R., Marshfield
*Landers, E. L., Joseph
*Lipshutz, Joseph, Portland
Millett, G. W., Portland
*Moore, P. H., Portland
*Nitschke, E. J., Portland
*Owen. E. P., Portland
*Payne, DeWalt, The Dalles
*Robertson, C. G., Salem
Semansky, E. J., LaGrande
*Sisson, M. A., Portland
*Spangler, P. E., Portland
*Swett, W. J., Portland
*Thomas, R. L., Portland
Wilcox, R. H., Pendleton
Zeller, W. E., Portland

CIVILIANS IN TARGET AREAS OF COUNTY SHOULD CARRY IDENTIFICATION TAGS

"To facilitate identification, each civilian in target areas of the country should be encouraged to carry an identification bracelet or necklace or metal identification pocket piece," *The Journal of the American Medical Association* advises in its October 17 issue in a condensation of Bulletin No. 5 on Emergency Mortuary Services, to be issued by the Medical Division of the United States Office of Civilian Defense. It is pointed out that in some air raids 40 per cent of the casualties may be fatal and that although the wounded require first attention, the dead should also be cared for promptly and inconspicuously.

The staff of the emergency mortuary service, according to the bulletin as condensed in *The Journal,* should include a physician to confirm deaths and a coroner or other medical examiner's representative who has authority to sign death certificates and order disposal of unidentified bodies. Volunteer members of an emergency mortuary organization are to enroll with the Volunteer Civilian Defense Office and are entitled to wear the armband and insignia of the Emergency Medical Service, of which the Mortuary Service is a part.

Among the other points brought out in the condensation by *The Journal* is that it is important that the identification tag on gas contaminated bodies be distinctly marked "gas case" in order that persons handling them will be warned to give them special treatment. Such bodies should be handled only by workers wearing protective clothing and masks and these workers must subsequently go through the cleansing prescribed for decontamination squad members.

NO WIDELY ACCEPTED EXPLANATION YET FOR SEASICKNESS

A review by W. J. McNally, M.D., and E. A. Stuart, M.D., Montreal, Canada, in the current issue of *War Medicine,* of experimental work on the labyrinth or inner ear in relation to seasickness and other forms of motion sickness fails to bring to light any widely accepted explanation for the cause of the condition or immunity to it. "The labyrinth has been shown by experiment to play an important, probably the most important, part in the causation of motion sickness," the two physicians explain.

WASHINGTON STATE MEDICAL ASSOCIATION

MINUTES OF THE MEETING OF BOARD OF TRUSTEES

First Session

September 12-13, 1942

The meeting of the Board of Trustees of Washington State Medical Association was called to order by the Chairman, George W. Cornett, on Saturday, September 12, 1942, at 1:30 p.m., Olympic Hotel, Seattle.

A quorum was present, the following Trustees answering the roll call:

G. W. Cornett, Yakima, Chairman; H. E. Coe, Seattle; H. D. Dudley, Seattle; V. W. Spickard, Seattle; A. J. Bowles, Seattle; J. H. O'Shea, Spokane; R. L. Zech, Seattle; W. D. Read, Tacoma; G. H. Anderson, Spokane; J. F. Christensen, Kelso; W. B. Penney, Tacoma.

Also attending the meeting were: M. P. Graham, Aberdeen; J. Reid Morrison, Bellingham; and Mr. Wm. T. Laube, Seattle, Attorney for the Association.

Minutes of the meeting of the Board of Trustees held May 24 were read and approved.

Report of Secretary-Treasurer

July 1, 1941 to June 30, 1942

General Fund		*Medical Defense Fund*	
Total Receipts	$24,097.07	Total Receipts	$12,887.01
Disbursements	27,686.52	Disbursements	20,587.35
($9,620.00 was invested in bonds)		($14,800.00 was invested in bonds)	

Bank Balances as of June 30, 1942

	Checking	*Savings*	*Total*
General Fund	$13,103.56	$5,516.59	$18,620.15*
Medical Defense Fund	5,534,02	16,015.46	21,549.48**

*Does not include the value of securities owned, purchased for $9,620.00.

**Does not include the value of securities owned, purchased for $34,190.00.

Bank Balances as of September 1, 1942

	Checking	*Savings*	*Total*
General Fund	$9,800.44	$5,571.75	$15,372.19*
Medical Defense Fund	5,677.81	16,175.60	21,853.41**

*Does not include the value of securities owned, purchased for $9,620.00.

**Does not include the value of securities owned, purchased for $34,190.00.

Membership as of September 1, 1942

Active	1,212
Honorary	74
Service	261
Total	1,547

733 members in the Medical Defense Fund; 92 of the 261 members in the service were former members of the Medical Defense Fund. It was voted that the report of the Secretary-Treasurer be accepted.

Communications

A communication addressed to the President of Washington State Medical Association, dated July 1, 1942, and signed by Dr. Thorburn S. McGowan, Past Assistant Surgeon, U. S. Public Health Service, regarding professional assistance rendered by members of the Washington State Medical Association in connection with the evacuation of Japanese, was read and ordered placed on file.

A communication addressed to the Central Office, dated June 30, 1942, and signed by Dr. John H. O'Shea stating that the American Medical Association had replaced their *Military Preparedness Committee* with the *War Participation Committee* and that Dr. O'Shea had been elected a member of the new Committee, was read and ordered placed on file.

Resignation of F. H. Douglass and H. T. Buckner

It was voted that the resignation of F. H. Douglass, called to active duty in the Army, from the Board of Trustees be accepted, and a letter of appreciation of his work in the Association be written.

It was voted that the resignation of H. T. Buckner, called to active duty in the Army, as Chairman of the Committee on Industrial Insurance and Health, be accepted and a letter of appreciation of his work on the Committee be written.

Prorationing of Medical Fees Under Initiative 141, Section 15

It was voted that the Board of Trustees oppose prorationing of fees and rescind its approval of the program submitted to them by the officials of the Department of Social Security, and recommend that the clause pertaining to prorationing in the agreement be withdrawn.

Expenses Incurred by Spokane County Medical Society Bulletin

It was voted that the statement for expenses incurred by Spokane County Medical Society Bulletin on its 1942 Convention issue be paid by Washington State Medical Association and a formal vote of appreciation be given to Dr. Robert P. De Riemer for his excellent work on the 1942 Convention issue of the Spokane Bulletin.

It was voted that H. E. Nichols be appointed Chairman of the Committee on Industrial Insurance and Health to replace H. T. Buckner, resigned.

Industrial Health Study

Dr. O'Shea recommended that the Industrial Insurance and Health Committee of the State Association supply the American Medical Association War Participation Committee with any information concerning industrial health which it may ask for.

It was voted that the Board of Trustees approve the recommendation.

Clark County Physicians re Kaiser Shipyards, Vancouver

The following recommendations were made by the Executive Committee of the State Association:

Recommendations on Medical Care of Employees and Employee Families of Kaiser Shipyard, Vancouver, and Clark County Medical Society

I

Shipyard Employees: The Northern Permanente Foundation to service both industrial and nonindustrial care to all of employees in the shipyard.

II

Alternative Proposal to Item No. I: The Northern Permanente Foundation approves a plan for free choice of physician by its employees where such employees had formerly employed the services of local physicians but with the provision that such services be authorized by the Northern Permanente Foundation and consultation and supervision to be given at no cost to the patients or attending physicians.

III

Employees Family Care: That no prepayment plan shall be adopted for the care of the employee dependents; further, that such dependents may have all the facilities of the company hospital under the care of the physician of their choice. The company reserves the right of staff supervision. That no full-time physician who is an employee of the company shall treat such dependents except in an emergency. This plan shall be effective until local medical care shall become insufficient or unforeseen exigencies arise demanding reconsideration.

Recommended by Drs. R. L. Zech, Chairman; H. D. Dudley, V. W. Spickard, Executive Committee, Washington State Medical Association, August 18, 1942.

In attendance: Drs. Sidney Garfield and Ernest Burgess of Kaiser Company; John H. Harrison, Secretary, Clark County Medical Society, and Henry Wiswall, Vancouver; Mr. Wm. T. Laube, Attorney, and Mr. Arthur Anderson, Executive Secretary, Washington State Medical Association.

It was voted that the action taken by the Executive Committee be approved.

Malpractice Insurance re Physicians in Service

The Board of Trustees was informed of the following action taken by the Committee on Medical Defense at its meeting Saturday, September 12.

It was voted that the following motion made by the Committee on Medical Defense on January 18, 1942, be rescinded: That after January 18, the dues of Defense Fund members who are in active military or naval service and who have cancelled their commercial malpractice insurance, will be prorated on a short term rate basis.

It was voted that any bonafide* member of the Medical Defense Fund will be exempt from payment of any further dues in the Medical Defense Fund during his service in the armed forces.

*A bonafide member is one who carries physicians malpractice insurance in an old line company acceptable to the Committee on Medical Defense.

Accumulated Funds of the Medical Defense Committee

The following action of the Committee on Medical Defense taken at its meeting Saturday, September 12, 1942, was read to the Board:

It was voted that the report of the Secretary-Treasurer be accepted, and a recommendation be made to the Board of Trustees on the advisability of investing properly the accumulated funds.

Initiative 141, State Border-line Cases

A communication was read to the Board of Trustees from Dr. John M. Flude, Medical Supervisor of the Department of Social Security, addressed to the President of the Association and dated August 1, 1942, regarding payment of fees to out-of-state physicians who render medical care to old age recipients from the State of Washington. A reply to this letter from Dr. Cornett, dated August 6, 1942, was also read to the Board.

It was voted that the letters be placed on file.

License Department re Licensing of Foreign Physicians

The Board of Trustees was informed that at a meeting held June 15, 1942, the Executive Committee had asked the Director of Licenses not to liberalize the requirements for licensing of foreign medicals.

It was voted that the Board of Trustees endorse the action taken by the Executive Committee in regard to the licensing of foreign physicians.

Initiative 151

It was voted that a necessary amount of money be appropriated to be expended under the supervision of the Executive Committee to hire experts to determine the exact costs of medical care for old age recipients.

Report of Wm. T. Laube

It was decided to hear Mr. Laube's report at the House of Delegates which would meet at 3:30 p.m. on the same day.

Adjournment and Executive Session

It was voted that the Board of Trustees adjourn and go into Executive Session immediately following the meeting of the House of Delegates and that the rules be suspended so that Mr. Laube and Mr. Anderson could attend.

Second Session

September 13

The meeting of the Board of Trustees of Washington State Medical Association during a recess of the House of Delegates was called to order by the Chairman, G. W. Cornett, on Sunday, September 13, at 11:30 p.m., Olympic Hotel, Seattle.

A quorum was present, the following Trustees answering to the roll call:

G. W. Cornett, Yakima, Chairman; H. E. Coe, Seattle; H. D. Dudley, Seattle; V. W. Spickard, Seattle; J. F. Anderson, Kelso; R. L. Zech, Seattle; A. J. Bowles, Seattle; W. B. Penney, Tacoma; J. H. O'Shea, Spokane; W. D. Read, Tacoma; G. H. Anderson, Spokane.

Nominations of Committee on Publication

According to the Constitution and By-Laws of the State Association, three members are to be nominated by the Board of Trustees to the Committee on Publication each year for a one year term, and elected by the House of Delegates. The following physicians were nominated by the Board.

S. F. Herrmann, Tacoma, nominated by Dr. Penney.
H. E. Coe, Seattle, nominated by Dr. Dudley.
R. N. Hamblen, Spokane, nominated by Dr. O'Shea.

It was voted that the nominations be closed and Secretary cast the ballot.

Resolution of Authority

It was voted that the resolution giving authority to the Secretary-Treasurer and the Assistant Secretary-Treasurer to sign checks issued by the Washington State Medical Association be adopted.

Three Members to Visit Safe Deposit Box

It was voted that A. J. Bowles, B. P. Mullen and the Chairman of the Finance Committee be given authority to visit the safe deposit box of the Washington State Medical Association, with at least two of the three to visit the box at the same time.

The meeting was adjourned at 11:45 a.m.

DEPARTMENT OF LABOR AND INDUSTRIES

CONSULTANTS FOR THE DEPARTMENT

Olympia, Wash., October 22, 1942.

To the Editor:

This article contains information which is of much interest to the industrial physicians of the state. The Department feels that NORTHWEST MEDICINE is the best medium for disseminating this information. Its publication in the next issue will be appreciated.

W. E. STEELE, M.D.
Chief Medical Advisor,
Department of Labor and Industries

Several months ago the Department thought it advisable to institute a new plan whereby local consultants or advisers would be appointed. The purpose of such appointments was to enable the Department through these appointees to authorize treatments, consultations, transfers, ordering of appliances, etc., when considered of an emergency nature, on the same day requested. Also they were to check claimants in the various hospitals and, through a closer cooperation between doctors and the Department, give the cases the advantage of services it had heretofore been unable to furnish. This plan was discussed fully with various medical committees and approved.

Tacoma was chosen as a starting place and Dr. H. J. Whitacre was appointed as the first consultant. The results were so gratifying that the Department later appointed Dr. Rhodehamel as consultant of the Spokane area. As soon as this was well organized, the plan was extended to include Vancouver. Dr. Ralph Lieser received the appointment. On June 1, Dr. Whitacre asked for a three months leave, Dr. Ralph Schaeffer took over the work in the Tacoma area and has continued since.

When Dr. Whitacre left for his vacation, he was asked to consider an appointment as consultant covering the entire state as it was felt this work should be extended, especially to the smaller cities and towns. On September 1 he returned, and his appointment was made effective on that date.

We are now working out plans whereby an injured workman will receive early rehabilitation with the thought that we can relieve doctors, who are already overworked, of the long aftercare of fractures, orthopedic operations, etc. It is necessary that all injured workmen be returned to industry as early as possible and we feel that early rehabilitation will hasten their recovery.

Dr. Walter Kelton has been appointed consultant in the Seattle area. His duties, however, will largely pertain to the rehabilitation program; also, to authorization of emergency treatments, consultations and appliances. Notices have been posted in the various hospitals in Seattle as a guide to the rehabilitation service.

We realize no plan can be perfect, but it is our hope that this is the beginning of a helpful service. Its success depends largely upon the medical profession and it is with true appreciation that we can now say we feel it will be a success. We wish to express our appreciation to each one and ask for continued cooperation.

The work in the Department has increased to practically three times that of eighteen months ago and our present staff is inadequate to give the service we would wish. We have only one doctor at Olympia to direct this great volume of work, and indulgence is asked until we can better the situation.

RECENT COMMISSIONS FOR WAR SERVICE

In the October issue were published names of Washington physicians who were commissioned in Army and Navy Service after the original list published in the August issue. The following men have been commissioned as of date October 25. Previously commissioned members numbered 288. This addition of 121 makes 409 members of the Association now in war service.

ARMY

Abraham, J. T., Wenatchee
Addington, E. A., Spokane
Barthes, F. E., Seattle
Baskin, L. S., Tacoma
Bassett, L. H., Shelton
Beattie, J. F., Renton
Bender, C. E., Seattle
Black, J. J., Ellensburg
Boyce, A. C., Spokane
Brown, J. H., Cle Elum
Brown, F. V., Spokane
Brown, N. R., Spokane
Brink, F. M., Spokane
Carlson, C. C., Tacoma
Carroll, G. S., Seattle
Compton, D. W., Vashon
Conway, W., Medical Lake
Cornelius, F. J., Olympia
Corneliussen, E. F., Seattle
Crowell, T., Seattle
Cummins, J. L., Seattle
Davis, J. V., Port Gamble
DeBit, R. M., Kennewick
Dumouchel, M. L., Raymond
Ehrlich, A., Tacoma
Emery, G. T., Castle Rock
Flynn, J. E., Everett
Frank, H. B., Fairfield
Gunderson, H. J., Everett
Hanford, R. B., Spokane
Hardy, J. L., Jr., Endicott
Harrington, B. D., Tacoma
Hartung, F. H., Olympia
Haug, A. D., Wenatchee
Heffron, C. E., Seattle
Henry, R. W., Endicott
Hindin, H., Ritzville
Hines, H. C., Pasco
Hodgson, E. R., Spokane
Hoff, C. L., Seattle
Hopkins, H. L., Leavenworth
Humiston, H. W., Tacoma
Jarvis, F. J., Seattle
Joy, F. B., Seattle
Judy, F. G., Spokane
Keyes, R. S., Walla Walla
Kraabel, D. O., Seattle
Kramer, J. W., Spokane
Kremer, L. A., Seattle (Interne)
Layton, E. G., Seattle
Lugar, L. R., Yakima
Lyle, F. M., Spokane
Lyon, C. L., Spokane
MacColl, W. A.., Seattle
MacKay, A. R., Spokane
Mares, L. M., Wenatchee
Martin, C. R., Skykomish
McBride, G. G., Tacoma
McElroy, W. G., Seattle
Meier, H. H., Tacoma
Mercer, S. T., Seattle
Miller, L. C., Wenatchee
Minthorn, H. H., Longview
Monzingo, F. L., Tacoma
Moore, T., Olympia
Morley, L. G., Pe Ell
Morgan, H. M., Longview
Nawrocki, W. E., Cle Elum
Nichols, E. E., Port Angeles
Norris, K. E., Seattle
Norton, R. A., Tacoma
O'Connor, M. J., Spokane
Pass, H. D., Seattle
Pence, L. C., Spokane
Perry, E. L., Seattle
Pettibone, D. M., Renton
Pollock, L. E., Rosalia
Reynolds, C. C., Tacoma
Rice, W. R., Centralia
Rowe, P. E., Everett
Schefter, R. P., Seattle
Seal, A. L., Seattle
Shearer, F. W., Toppenish
Scheyer, C. J., Tacoma
Schultz, M. J., Renton
Smith, L. H., Wenatchee
Sorenson, O. S., Seattle
Speelmon, E. R., Spokane
Stevens, M. W., Kennewick
Stevens, R. W., Walla Walla
Stimpson, E. K., Bellingham
Stokesbary, D. L., Ferndale
Stuart, R. E., Spokane
Sturdevant, K. H., Puyallup
Sweet, P. W., Centralia
Tipler, R. J., North Bend
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Whatmore, J. H., Seattle
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Wick, H. W., Seattle
Willard, D. G., Tacoma
Wilson, N. D., Puyallup
Wirz, M. J., Seattle
Yunck, W. P., Seattle

NAVY

Hanks, T. G., Seattle
Hoedemaker, E. D., Seattle
Mayer, Henry, Jr., Seattle
McMahon, W.A., Seattle
Meagher, A. C., Toppenish
Moosey, G. A., Tacoma
Scheyer, C. J., Puyallup
Snyder, J. E., Vancouver
Tuell, J. E., Seattle
Wehman, F. J., Spokane

MEDICAL NOTES

Addition to County Hospital. The Federal Works Agency has awarded a grant of $600,000 to finance a 200-bed addition to King County Hospital, Seattle. Plans provide for basement and two stories of brick veneer wooden construction, to be located on the north side of the present hospital. Difficulty in obtaining construction materials has determined the size and character of the addition. The construction of this hospital will depend upon King County voters providing an additional $200,000. A one mill levy to obtain the sum will be before them in the November election.

Funds Approved for Hospital. Presidential approval has been received of $501,000 for a hospital at Renton. Specifications call for a one-story, 100-bed hospital, with quarters for staff and all appliances for a modern hospital. Construction will start within a few weeks, with expectation that the hospital will be completed within six months.

Isolation Hospital Proposed. County commissioners of Clark County have applied for funds to remodel an abandoned county W. P. A. office and shop building in Vancouver, to be used as an isolation hospital.

Modern Hospital from Poor Farm. Some years ago Snohomish County established a poor farm which was later used as a home for homeless, incurable and aged. Now it has been remodeled and converted into a county institution and renamed Valley View Hospital, situated about six miles east of Snohomish. It is operated under the direction of the county welfare department, and is supplied with modern equipment and facilities.

Controversy Over Abolishing Hospital. It has been proposed to close the Seattle City Emergency Hospital by having King County Hospital take over city hospital duties. This is a feature of the proposed closing of the antiquated Public Safety Building, with transference of the city jail and police court to the County-City Building. The whole plan is stalled by disagreement with the county commissioners.

Hospital Enlarged. A fourth floor is to be added to St. John's Hospital at Port Townsend, under the supervision of the Sisters of Providence in Seattle, at a cost of $23,000. Recently the building was damaged by fire. The addition will provide quarters for sisters and nurses.

Hospital Incorporated. Mount Vernon Hospital has been incorporated by a group of doctors in that city. The institution is capitalized at $20,000. It was purchased from previous owners. Additional equipment has been added to establish it as a modern hospital.

Doctor for Coroner. Lewis County will have a physician as coroner, whatever may be the result of the election, since D. O. Nugent of Centralia is the democratic candidate and C. G. Bain of Chehalis is running on the republican ticket.

County Health Officer. W. L. Jackson of Burlington has recently been appointed Skagit County health officer, succeeding W. V. King. Dr. Jackson also becomes head of the county civilian defense medical unit.

Appointed to School Board. W. L. Curtis of Hoquiam has been appointed a member of the city board of education.

New Locations. R. W. Kite, who recently has practiced in Seattle, has moved to Kennewick to take the practice of R. M. DeBit who has gone into army service. Jesse J. Beatty, who has been director of San Francisco, Calif., Veterans Hospital, has been detailed as manager of Walla Walla Veterans Hospital to succeed Grover C. Daniel who has been transferred to Whipple Veterans Hospital at Prescott, Ariz. W. M. Dietz, who formerly practiced at Spokane and Odessa, has located at Palouse. E. L. Gardner, who has served as superintendent of Lewis-Pacific Public Health District, has been transfered to Alameda, Calif. He will be succeeded by Robert Fishbach.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Cowlitz County Medical Society was held Wednesday evening, October 21, at the Hotel Monticello, Longview.

W. N. Moray Girling gave a most interesting paper on "Lower Half Headaches." It was discussed by several members. Results from treatment of lower half headaches due to allergic disturbances have proven satisfactory in a number of cases, and Dr. Girling hopes to be able to show more and better results in the next few months.

G. H. Mathis of Toledo gave a paper on "Resuscitation of the New Born" and some "Newer Problems in Gynecology and Obstetrics." He demonstrated a new uterine packer and an infant resuscitator.

H. H. Minthorn of Longview was elected to membership. The society invited Dr. Horace Whitacre of Tacoma to speak at the next regular meeting, November 18, on "Rehabilitation of the Injured Workman."

KING COUNTY MEDICAL SOCIETY

The regular monthly meeting of King County Medical Society was held October 5 in the auditorium of Medical and Dental Building, Seattle, at 8:15 p.m., President William M. O'Shea presiding.

It was announced that during duration of the war there will be only one monthly scientific meeting of the society, to be held on the first Monday.

Applications for membership were received from Charles E. Bender, Joseph Cummins, Cornell L. Hoff, Charles A. Meyer, Ole Slind and James A. Tupper.

A proposed amendment to the by-laws was read providing for an increase in annual dues. Details concerning different dues for different ages were specified.

The paper of the evening was read by W. H. Bueerman, M.D., Lt. Commander, M. C., U. S. Naval Hospital, Bremerton. His subject was "Blast and Compression Injuries of the Abdomen." It dealt with the use of high explosives in warfare, a description being given of different forms employed, with an analysis of the injuries produced by them. Different forms of casualties were considered, with descriptions of their anatomic injuries. Their symptoms were discussed and methods of treatment described.

WALLA WALLA VALLEY MEDICAL SOCIETY

The regular meeting of the Walla Walla Valley Medical Society was held October 8, at the Grand Hotel, Walla Walla, with Dr. Paul G. Flothow, Neurosurgeon of Seattle the guest speaker. His subject was "Herniation of the Intervertebral Disc vs. Spinal Injury and Low Back Pains."

Captain R. G. Gladen, Neuropsychiatrist of the U. S. Army Air Corps, of Walla Walla Air Base, opened the discussion. A general discussion by the Society followed.

PIERCE COUNTY MEDICAL SOCIETY

At the September meeting of this society at Tacoma, the following constituted a part of the program:

A TRIBUTE TO DR. HARRY G. WILLARD

His days of toil have run their busy course,
His cup of service filled and flowing o'er;
He worked with strength renewed from unseen source,
Physician, surgeon, friend and councilor.

For those of us whose privilege it was
To know this man and have him as a friend,
His life shall be, till time our curtain draws,
An inspiration, with us to the end.

For kindly way and counsels born of truth,
For skillful hands by studied knowledge sure,
For eye and ear attuned to age or youth,
For judgment fair, unbiased and mature,

For these and more do friends of every creed
Give heartfelt praise for what his work has been;
An honest, active life as one could lead,
A life of service to his fellow men.

Lewis Hopkins, M.D.

OBITUARIES

Dr. Charles M. Pearson of Tacoma died September 11, aged 69 years, after a long period of illness. He was born in Sweden. He obtained his medical degree at Rush Medical College, Chicago, in 1904. He practiced in Ogema, Wis., and located for practice in Tacoma in 1919. During World War I he served with the United States army in France, retiring with the grade of captain.

IDAHO STATE MEDICAL ASSOCIATION

FIFTY-FIRST ANNUAL MEETING, 1943

HOSPITAL TO BE CONSTRUCTED. Plans have been completed for the construction of a forty-bed hospital at Stibnite, a new town engaged in tungsten operations. Dr. Glenn McCaffery of Kellogg has headed the planning committee.

E. L. SIMONTON of Wendell, who retired from practice some years ago, has resumed practice with his office in Jerome, driving back and forth from Wendell.

ROY FREEMAN, who has recently practiced in Longview, Wash., has located for practice at Boise, where he will specialize in dermatology.

JOHN R. MCMAHON, who has been in practice at Shoshone, has moved to Pocatello, where he will be associated with E. N. Roberts.

A. J. WHITE, who has practiced at Genesse for the past six years, has moved to Lewiston, where he will take over the practice of W. J. Jacobs who has gone into army service.

J. P. WEBER, who has practiced in Grangeville, has moved to Glenns Ferry, where he will be resident physician for the Union Pacific railroad.

BOOK REVIEWS

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS. By John Albert Key, B.S., M.D., St. Louis, Mo., Clinical Professor of Orthopedic Surgery, Washington University School of Medicine, etc., and H. Earle Conwell, M.D,. F.A.C.S., Birmingham, Ala., Orthopedic Surgeon to the Tennessee Coal, Iron and Railroad Company, etc., Third edition. 1303 pp, $12.50. The C. V. Mosby Company, St. Louis, 1942.

It is stated this book is written not only for the surgeon but also for the general practitioner, every one of whom should be able to recognize the possible occurrence of complications and deformities in certain fractures. In some types of fractures injury to the soft tissues is of more importance than the fracture itself. In this edition the most extensive changes have been made in sections devoted to fractures of the spine, humerus, hip and foot. Part I includes chapters on principles and general aspects. Special attention should be called to the chapters dealing with workmen's compensation laws affecting fracture cases and medicolegal aspects of fracture cases. Familiarity with the principles described herein should be of value to every man treating fractures.

Part II, dealing with diagnosis and treatment of specific injuries, considers all fractures of the body. That dealing with compound fractures has been rewritten largely as the result of introduction of the sulfonamides in their treatment. A new chapter on war injuries has been added. While little claim can be made to originality in treatment of fractures and dislocations in this volume, the authors stress methods which have been found reliable and practicable. These are described with no attempt to trace them to their sources. A feature of this work is the abundance of illustrations, numbering 1259, which are a great addition in illuminating the text. Any medical man treating fractures and dislocations will find this volume of great assistance.

CENTRAL AUTONOMIC REGULATIONS IN HEALTH AND DISEASE. With Special Reference to the Hypothalmus. By Heymen R. Miller, M.D., Associate Attending Physician, Montefiore Hospital, New York City. 430 pp., $5.50. Grune & Stratton, New York, 1942.

This book is a complete and thorough resume of experimental work with theoretical considerations on the autonomic nervous system. The bibliography is exceptionally well recorded and from that viewpoint alone would make the book fine reference material. The cerebral cortex is emphasized as the final control over most autonomic adjustments.

There is a detailed presentation of anatomy of the hypothalmus. The author stresses that it is the nervous system which controls the distribution of fat more than the thermodynamic mechanism. The chapter on sleep and its disturbances holds the interest of the reader and many theories and experimental work are given.

The only criticism offered of the book is that it lacks definite conclusions. The author presents most of the established views of the different schools and unfortunately does not summarize at the end of each chapter the most accepted thought at the present time. So many conflicting studies are given in the text that at times it leaves one quite bewildered. As a standard reference book on central autonomic regulations in health and disease it should be in all medical libraries. N. K. RICKLES

THE CARE OF THE AGED (Geriatrics). By Malford W. Thewlis, M.D., Attending Specialist, General Medicine, U. S. Public Health Hospitals, New York City, etc. Fourth Edition, Thoroughly Revised. With 50 Illustrations. 589 pp., $7.00. The C. V. Mosby Company, St. Louis, 1942.

While the diseases affecting the aged do not differ from those in younger brackets of life, their appearances often present features conditioned upon age, which is a justification for a special book on them. It is stated that the 1940 census shows there are 8,966,000 persons over sixty-five years of age in the United States, an increase of 35 per cent since 1930, while there has been an increase of only 7.2 per cent in the total population. It is believed that World War II may cause a still greater disproportion between the young and the old.

It is a common belief that when an individual has passed his three score and ten years of life, his real usefulness has ended. The author devotes a chapter to the value of old age, in which is enumerated a long list of outstanding accomplishments in literature, arts and sciences by individuals functioning even in the eighties and nineties.

In an interesting style, the author discusses many geriatric problems dealing with pathologic changes in the aged, calling attention to the likelihood of diagnostic errors unless one carefully correlates ordinary symptoms with those of age. One does not ordinarily associate malingering with the aged but a chapter stresses this possibility which the patient may develop for the purpose of attracting special attention in the way of treatment, or to relieve hours of

(*Continued on Page* 26)

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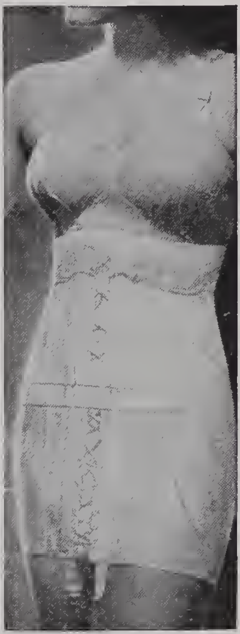

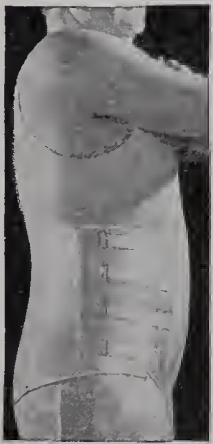

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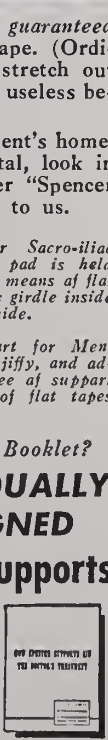

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BOOK REVIEWS

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loneliness. Ordinarily alcoholism is considered a weakness of youth, but it may be found in the aged. Sometimes such cases produce special problems, for the treatment of which there is demanded the exercise of judgment and discrimination. Since there is such a demand for young physicians in war service, it is likely that these patients may largely fall to the care of older practitioners.

MEDICAL PARASITOLOGY. By James T. Culbertson, Assistant Professor of Bacteriology, College of Physicians and Surgeons, Columbia University. 285 pp., $4.25. Columbia University Press, New York, 1942.

This volume offers a simple and brief description of animal parasites and the diseases they cause. Many such disorders are responsible for serious public health problems. While we are accustomed to associate parasitic diseases particularly with the tropics, they may have even greater significance in temperate zones. While some parasites are feeding on the victim's own body or the food he has ingested, the subject may be entirely unaware of the presence of the parasite in his body or near it.

The chapter on epidemiology and acquired immunity offers a valuable explanation of the role played by parasites. Under diagnosis are descriptions of parasites in urine, sputum, blood and other tissues, while the methods for their detection are explained. Six different species of ameba infect man, only one of which, the histolytica, causes disease. The others, harmless from this standpoint, are all found in the large intestine except the gingivalis which occurs in the mouth. The trypanosomiases are mostly found in the tropics. Some appear in moderate zones and may be transmitted by our citizens scattered in such large numbers at the present time throughout the world. The malarias are considered in much detail, being diseases with which we have all more or less acquaintance. It is impossible to enumerate all of the parasites mentioned in this volume, but they offer interesting subjects for study.

COLWELL'S DAILY LOG for Physicians for 1943. A Brief, Simple, Accurate Financial Record for the Physician's Desk. $6. Colwell Publishing Co., Inc., Champaign, Ill.

If a physician wishes a convenient, handy method of keeping his daily accounts, he will find it in this daily log. Its attraction is its simplicity, with space for each day of the month followed by headings for a summary of expense and monthly balances. If one is unfamiliar with the principles of medical accountings, suggestions are offered in the preface.

WAR MEDICINE. A Symposium. Editor, Winfield Scott Pugh, M.D., Commander (M.C.), U.S.N. Retired, Formerly Surgeon, City Hospital, New York. 565 pp., $7.50. Philosophical Library, Inc., New York, 1942.

This volume includes papers on many phases of war medicine. They comprise thirty-three dealing with surgical problems, ten covering aviation and naval medicine and fourteen on general medicine. All are written by U. S. surgeons except seven by British authors. They cover injuries and diseases which are found on all battlefields, a few of which are treatment of war burns, wounds of the brain, ophthalmological casualties from air raids, gunshot

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BOOK REVIEWS

(*Continued from Page 26*)

wounds of the heart, chest, abdomen, secondary shock. One deals with lung injury due to detonation of high explosive. There is a consideration of aviation medicine in the navy and principles of aviation medicine, hypotension in aviation, fatigue in aircraft pilots. General medicine offers considerations of treatment of gas casualties, allergy in military medicine, chigger and jigger bites, malingering and shamming night blindness. These topics suggest discussions of many conditions incident to war casualties.

War and the Doctor. Essays on the Immediate Treatment of War Wounds. Edited by J. M. Mackintosh, M.D., Chief Medical Officer of the Department of Health for Scotland. 135 pp., $2.00. William Wood & Company, Baltimore.

In this book is a chapter on fear neuroses, in which it is stated fear in itself is not abnormal. Rational fear has always an objective reality. Its pernicious results in war are described. There are suggestions as to the treatment of shock and hemorrhage, and the usual injuries occurring in warfare.

CONTINUED CAUDAL ANESTHESIA IN OBSTETRICS

A new method for continuous or fractional caudal anesthesia has been developed by Edwards and Hingson (*Am. J. Surg.*, 57:459, September, 1942). It appears to be remarkably effective and yet retains the complete cooperation of the patient. There has been uniform absence of delerium, narcosis, cyanosis, nausea, vomiting, and anoxemia, and no interference with uterine contractions. Every infant in the authors' series breathed spontaneously except one stillborn known to have been dead several days before delivery.

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One patient described was having eclamptic convulsions when admitted, with blood pressure 220/110. After the initial dose of "Metycaine" was given, the pressure declined to 140/90 and the clinical picture improved remarkably. The anesthetic was continued throughout the day without the blood pressure exceeding 150. She delivered a healthy baby spontaneously thirteen hours after the initial dose.

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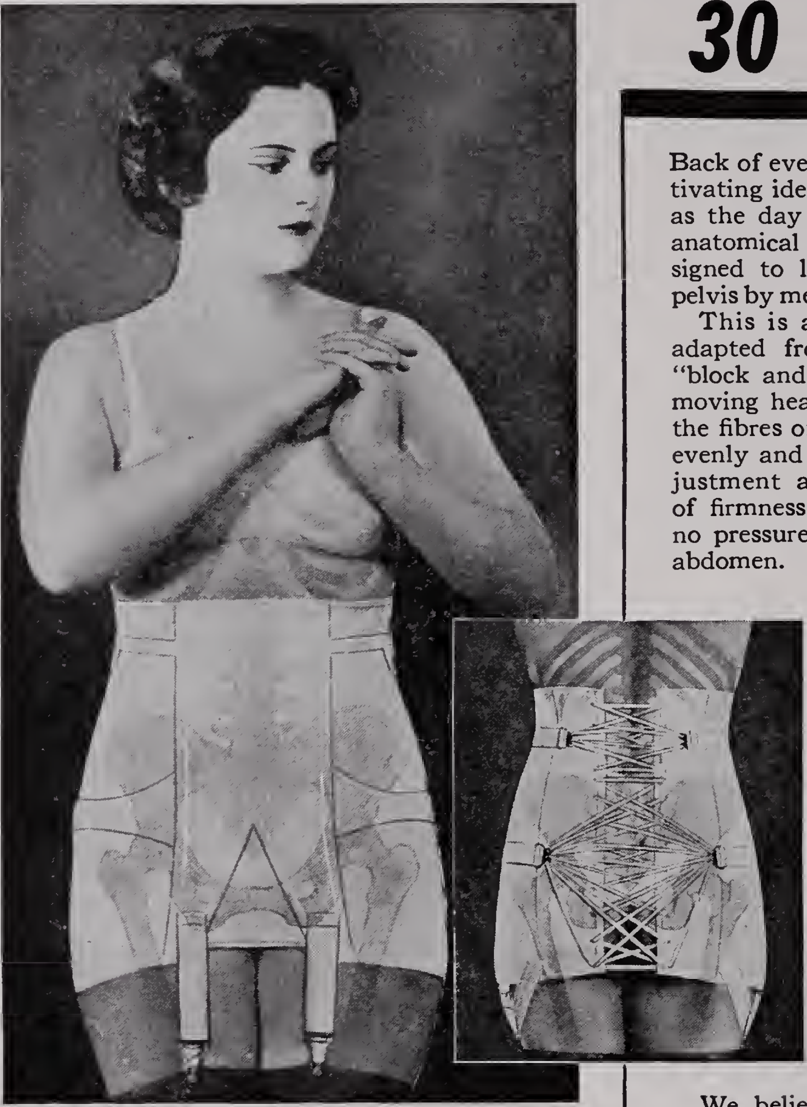

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NORTHWEST MEDICINE

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This journal goes to press the first day of the month. Material for publication should be received by the 25th of the preceding month.

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Illustrations will be provided by the journal to the extent of moderate cost, beyond which the contributor may provide anything he desires. Arrangements can be made by correspondence.

EDITORIALS

CONFERENCE OF STATE SECRETARIES AND EDITORS

The annual conference of secretaries of state medical associations and editors of state journals was held in the American Medical Association building in Chicago, November 20-21. Our states were represented by Secretary T. D. Robertson, of Oregon State Medical Society, Secretary A. J. Bowles, of Washington State Medical Association, and C. A. Smith, editor of NORTHWEST MEDICINE. Also present were R. A. Fenton of Portland, A.M.A. trustee, and J. A. Fitzgibbon, Oregon member of House of Delegates. Secretaries of nearly all state organizations and editors of all state journals were present. The program for the first day consisted of papers pertaining to war problems and their relations to the medical profession. The second day's program included papers dealing with medical service plans and industrial health. It is possible to make only passing references to some of these subjects.

President Fred W. Rankin of American Medical Association deplored the necessity of cancellation of so many association meetings, and recommended wherever possible to schedule small meetings and perhaps joint state meetings. In spite of reduction in medical school faculties, present standards of medical education must be maintained. Research efforts must not be abandoned. At present there is an adequate supply of physicians for armed forces, but expansion of the army will make further demands on the medical profession which will become a pressing problem for the Procurement and Assignment Service. It is notable that the medical profession is the only group which has not been subject to draft. In spite of attacks and recriminations against them, they have continued to meet demands for service.

Surgeon General Ross T. McIntire, of the United States Navy, discussed "The Reserve Medical Officer in the Wartime Setup of the Navy Medical Corps." Our plans for medical navy service exceed those of any other nation. There are forty-one naval hospitals, with bed capacity of 175 to 3500 beds each. So complete have been preparations for casualty care that there was less than one per cent mortality in a thousand cases in the Solomon Islands conflict. Special emphasis was placed upon results from the free use of sulfa drugs. Abundant supplies of blood plasma and albumin have been a notable factor in combating shock. He emphasized the serious situation which will result from postwar conditions for which provisions must be made. Thousands of doctors will return with new ideas as to treatment and medical service.

"War Problems for Medicine" was the subject discussed by Frank H. Leahy, chairman of the Board of Procurement and Assignment Service. He devoted much time to considering the dislocation of medical men and locations for new fields of practice. This is not a task for provision on the part of laymen. It can be satisfactorily negotiated only by medical men. The results accomplished by his board have not been appreciated. Already more than 250 physicians in 42 cities in 29 states have been located through Procurement and Assignment Service. In some states this allotment of physicians has been satisfactorily accomplished through committees of state associations. The secretary from Texas later described the survey made by his state association, listing the population of each county with its normal number of physicians, the number in war service and the relocation of men in needy localities. It was a model for consideration by other states.

General Hillman represented the Surgeon General of the U. S. Army. He stated that 36,000 medical officers are now in service, and if the army is expanded as has been anticipated, it will call for a thousand more to be commissioned each month. Surgeon General Thomas Parran of the U. S. Public Health Service emphasized the increase in venereal diseases in the army. He stated that in the British army syphilis had increased ten, twenty and forty per cent respectively in one, two and three years. He also emphasized the necessity of relocating doctors in certain localities in order to preserve the general public health. Papers on similar subjects were "Physicians for Civilians," by Creighton Barker, secretary of Connecticut State Medical Society, and "Functions of War Participation Committees," by Walter F. Donaldson, chairman of the War Participation Committee of the A. M. A. These papers and discussions will be published in full in later editions of *The Journal of the American Medical Association.*

WHO ARE ESSENTIAL PHYSICIANS

There has been much discussion and misunderstanding among medical men concerning the determination of those who are essential and, therefore, exempt from army service. The following clarification of this problem is taken from the rules and regulations of the Procurement and Assignment Service. While some readers may be familiar with these requirements, their publication will probably be acceptable.

A physician employed in industry is deemed to be essential when the following conditions exist:

A. Fulltime industrial physician.

1. The physician is employed by an industry which is manufacturing war materials exclusively or under priority ratings, and

2. The physician giving his full time to the industry or forty or more hours weekly, has been so employed for at least two years, or is especially trained for that purpose and is carrying on an acceptable health maintenance program, and

3. The physician performing the function of a medical director or department head or of a specialist or is the only physician employed.

4. Assistant physicians who perform routine functions under direction, and are employed on a fulltime basis, are deemed essential until they can be replaced within a reasonable time (3 to 6 months).

B. Parttime industrial physician.

The physician serves parttime two or more industries engaged exclusively in the manufacture of war materials or under priority ratings, providing his total part time service is the equivalent of forty or more hours weekly. Note: The physician who serves on call only is not deemed to be essential.

C. The physician serves a State industrial hygiene bureau on a fulltime basis.

MEDICAL SERVICE AT KAISER SHIPBUILDING PLANTS

During the past year few individuals have received as much newspaper publicity as Henry Kaiser, the shipbuilding wizard of the Pacific Coast. Through introduction of new methods of procedure and intensive application, these plants have astonished the world and confounded the orthodox ship builders by the speed and perfection with which they have launched their vessels. These results have been obtained by enlistment of a swarm of trained and untrained laborers from all parts of the country, the care of whom has produced many acute problems.

This situation has been emphasized in the Portland metropolitan area where two shipbuilding plants have been established. Besides the pressing housing problem, the medical care for these employes and their families has imposed on the medical profession many puzzling considerations which have not previously existed. One of the most urgent was hospital accommodations for this influx of new residents. The plan to build a new hospital to meet the emergency was disapproved by the local medical profession. In order to meet the requirements of the shipbuilding plants and establish cooperation between the medical profession of Portland and their medical staffs, a successful solution was obtained through an intense campaign that investigated local possibilities and ability to provide urgent necessities. A survey of local hospitals demonstrated that they could be expanded to provide for all requirements, and the local profession will be able to furnish medical needs for the additional citizens. In the Oregon Section of this issue is published a report of the committees that have accomplished these satisfactory results, which demonstrates what may be done by careful cooperation of all concerned in promoting a new enterprise.

In addition to the two plants in the Portland area, a third shipbuilding plant has been established at Vancouver, Washington, across the Columbia River from the Portland establishments. The expansion of the personnel in this plant and their medical requirements produced demands in excess of what seemed available from the local medical profession. Accordingly, a 75-bed, up-to-date, thoroughly equipped hospital was built. Conditions attending the care of the families of these workers produced friction between the local medical profession and those of the shipbuilding institution. Conferences have been held between representatives of the medical profession of the state and shipbuilding officials which, it is expected, will result in an amicable adjustment of the medical problems involved.

FOUR DECADES OF PUBLICATION

This issue of Northwest Medicine concludes forty years of its publication. When the first number was published in January, 1903, it was a venture in an unexplored field by all who participated in it, since none of them had previously engaged in any journalistic enterprise. The journal was launched under the auspices of Washington Medical Library Association, a nebulous institution existing only on paper. One of the prime purposes of the journal undertaking was to aid in the establishment of a live library. In 1907 Washington State Medical Association adopted it as its official journal. In 1909 the Tri-State Medical Society was organized, comprising the state medical associations of Oregon, Washington and Idaho. This was a rational combination, since at the earliest settlement of this northwest region these three states formed a part of Oregon Territory. At this time the Tri-State Society adopted Northwest Medicine as its official journal, and it has continued to represent the three state organizations since that time.

Although the journal has existed for forty years, it will be noted that the volume for this year is numbered 41. This was due to the fact that when the journal was adopted by the Tri-State Society, starting July, 1909, a new volume was begun, thus making two volumes for that year. Since that time the numbered volume has been one year in advance of the age of the journal. During these years the chief purpose of this journal has been to serve the medical profession of these three states. Each month it has devoted time and space for assembling information and reports dealing with the three state societies. It has continually offered an opportunity for publication of papers written by their members, supplemented by contributions presented before these organizations by leading members of the profession from other parts of the country.

During the period of the journal's existence, Clarence A. Smith, of Seattle, has been editor-in-chief. Different physicians have served at times as assistants to the editor, but have retired from that position from time to time for various reasons, the latest withdrawals being due to induction into war service. The editorial staff has included the secretary of each state association as assistant editor, with two other representatives from each of the states as associate editors, each group having assigned to it certain fields for production of publication material. Attention is called to this brief history of the journal at this time since a decade has become the traditional period in any organization for calling attention to the advance of years and taking a glance at past accomplishments with an outlook for the future, and four such periods provide much material for reflection. One cannot avoid the fact that the future will present uncertainty at this time, whatever may be the nature of the institution under consideration.

UROLOGY AWARD

The American Urological Association offers an annual award "not to exceed $500" for an essay (or essays) on the result of some specific clinical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, May 31-June 3, 1943, Hotel Jefferson, St. Louis, Missouri. Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 1, 1943.

PRESIDENTS FOR THE COMING YEAR

Photographs of the presidents of our three state associations are presented with data concerning medical education and previous practice. There are only a few members of our state organizations who are privileged to serve as our presidents. It is a distinction in which one should take pride as an indication of the confidence and admiration of his fellow practitioners. The office of president of a state society is one of responsibility, and oftentimes entails much labor and sacrifice of time to accomplish desired results. Never in the history of our country have there been such urgent demands on the medical profession as exist at the present time. The burden of fulfilling them falls especially on the officers of our state and county medical societies. It is the duty of every member of a state organization to sustain the efforts of the officials to fulfill the demands made upon the doctors of our states to meet the requirements of the war program. Upon these presidents will devolve to a large extent the burden of meeting the demands of the war emergency. It is unnecessary to appeal to the members to give their unqualified support in carrying out the programs outlined for their organizations, since all loyal physicians will perform their responsibilities willingly and promptly.

ANNUAL ANTITUBERCULOSIS SEAL SALE

At this time the annual sale of tuberculosis seals is in progress. It is well known that campaigns against tuberculosis are carried on by means of revenue obtained from these annual sales. There has been much criticism of this work by those who emphasize the fact that large sums of money are obtained from this source, none of which is used for treatment of tuberculous patients, but is consumed in the efforts of the promoters of the nationwide campaign against tuberculosis

While these statements are correct, the explanation of the utilization of these funds does not accompany the criticisms so freely expressed. It has been established that the outstanding reduction of morbidity and mortality from tuberculosis has followed the educational campaigns conducted by natitonal, state and county antituberculosis organizations. The funds obtained from the sale of seals are devoted to administration and educational purposes. If one prefers the term propaganda, that may be applied to dissemination of information concerning tuberculosis which is conveyed to the public by means of public addresses, distribution of literature, use of the radio and other procedures, all of which demand expenditure of funds.

GEORGE E. HENTON
(Portland)
President, 1942-1943
Oregon State Medical Association

Dr. Henton was born in York, Nebraska, on March 9, 1879. He attended York High School and Cotner University, Lincoln, Nebraska. He was graduated from Illinois Medical College, Chicago, in 1902. He engaged in general practice at Friend, Nebraska, from 1902 to 1911. After special training in opthalmology and otolaryngology, he located in Portland in 1913, specializing in these branches of practice. Later he studied in European eye clinics, and since 1938 has limited his practice to ophthalmology. He has long been an active worker in behalf of organized medicine, having served on the Councils of Multnomah County and Oregon State Medical Society. He is chairman of the Bureau of Medical Economics of Oregon State Medical Society and President of Multnomah County Medical Society.

While the ambitious aims announced some years ago of eliminating tuberculosis within a certain number of years have not been attained, the astounding reduction of diseases due to the tubercle bacillus has been one of the great accomplishments of scientific medicine. These results are being largely promoted by determination of early diagnosis which is being accomplished by dissemination of information as to early symptoms and submission of patients to early examination. The continuation of these beneficent results is justification for this annual campaign for securing funds. The constant

ALBERT P. DURYEE
(Everett)
President, 1942-1943
Washington State Medical Association

Dr. Duryee was born in Falls Church, Virginia, March 8, 1879. He attended the University of Washington for one year, and then obtained his medical degree from the University of Pennsylvania in 1904. He practiced in Brockton, Mass. in 1905. He came to Everett in 1906, and has practiced there since that date. He is engaged in general practice, paying special attention to surgery. In World War I he served in the Ambulance Corps in Italy as Captain, and was medical officer at Vicenza, the United States Advance Base. He has twice served as president of Snohomish County Medical Society, and for many years has been a member of the Washington Association House of Delegates. He served as city health officer in Everett 1907-1911, and was president of the Chamber of Commerce 1935-36.

GEORGE O. A. KELLOGG
(Nampa)
President, 1942-1943
Idaho State Medical Association

Dr. Kellogg was born in Quincy, Kansas, March 29, 1879. Before studying medicine his college training was acquired under a tutor. He studied medicine at Colorado State University School of Medicine, from which he graduated in 1903. In 1902-1903 he was first assistant to Dr. Luman M. Giffin, dean and professor of surgery. In 1903 he settled in Nampa, where he engaged in general practice until 1920, and since that date has specialized in general surgery. He has been chairman of the staff of Mercy Hospital, Nampa, since its organization. He is president-elect of Pacific Northwest Medical Association.

appeal to the public for purchase of war bonds and stamps, support of the Red Cross, the assurance of tremendous demands on incomes during the coming year may have an appreciable effect in reducing the returns from the seals sale which have been established in past years. If this result ensues, it will necessitate reduction of budgets to meet income. This may be a sequence of existing conditions which it will be necessary to accept.

AMERICAN COLLEGE OF PHYSICIANS MEETING CANCELLED

The Board of Regents of American College of Physicians announced the cancellation of the annual meeting for Philadelphia, April 13-16, 1943, necessitated by the fact that large medical gatherings may interfere with the defense effort. More than a thousand members of the college are on active military duty, and by April this will probably be increased by another five hundred. The consequent shortage of physicians for civilian needs and other purposes will make it impossible for them to attend or prepare papers for the general scientific program.

ORIGINAL ARTICLES

SILICOSIS*

GENERAL CONSIDERATIONS AND SURVEY IN THE COEUR D'ALENE MINING DISTRICT OF IDAHO

Paul M. Ellis, M.D.
Max T. Smith, M.D.
Hubert E. Bonebrake, M.D.
Lewis B. Hunter, M.D.
WALLACE, IDA.

The interest of the general public in silicosis is of recent origin, and the field of knowledge of the general practitioner, industrial physician and surgeon has increased manifold in the last decade. However, the history of dust diseases goes back to antiquity. Pliny, Hippocrates and Celsus were among the first to record the description of the symptoms of the lung disease of the miner.[1] Thachrah[2] in 1831 made a study of the effect of the dust trades on the length of life.

Introduction of machine mining in the gold fields of South Africa shortly after 1886 and the health problems produced thereby led to the appointment of the Commission of Enquiry. Physical examinations of 3,000 miners and the first use of the roentgen ray in 300 cases were made. Sir Robert Kotze[3] devised an instrument for estimating the amount of silica dust in the air of underground workings. Much of the credit for the beginning of investigations belongs to the South African investigators.

English, German and Italian investigators have added their contribution. The Unted States Bureau of Mines established a clinic in the Tri-State Lead and Zinc Mining district in 1924 which led to studies in other fields. Sayers of the Public Health Service, Drinker of the Harvard School of Public Health, Cummings, Gardner, Vorwald of the Saranac Laboratory and many others have contributed to our knowledge of this disease[4].

The Committee on Pneumonoconiosis of the Industrial Hygiene Section of the American Public Health Association recently defined silicosis as a disease due to breathing air containing silica (SiO_2), characterized anatomically by generalized fibrotic changes and development of miliary nodulation in both lungs, and clinically by shortness of breath, increased susceptibility to tuberculosis (some or all of which symptoms may be present) and characteristic roentgen findings[5].

Silica is the most common constituent of the minerals making up the earth's crust and occurs free and combined. The free silicas are a definite group of compounds in the form of SiO_2. The combined are silicates. Quartz, the most common of the free silicas in nature, is a hard mineral and chemically resistant to reagents. It is an abundant constituent of schist, granite, sandstone and quartzite. Many ores are found in veins that consist almost entirely of quartz. This condition exists in the Coeur d'Alene mining region. Silica is used in numerous ways, among which are scouring and polishing soaps, powders, sandpaper, sandblasting, metal buffing, sawing and polishing marble, whetstones, pottery, metallurgy, foundries, decorative materials, etc. So the hazard of inhalation exists in many industries other than mining. However, it is with mining that we are interested, and from this industry the material for this study has come.

It is accepted that silica is the exciting cause of silicosis. Many factors enter into the manner in which it exerts its action. While silica exists combined in asbestos, and asbestosis results from the inhalation of asbestos particles, we have had no experience with this disease.

The size of the particle of inhaled silica is of prime importance. Particles larger than 10 microns may be eliminated from consideration[6]. The ciliated membranes as defensive mechanisms of the upper respiratory tract remove the larger particles. These settle more rapidly from the air and may not appear in a concentration at the breathing level. It is probable that only those particles less than 3 microns in diameter are of great significance. There is evidence that those from 3 to 10 microns are relalively inert[7]. The concentration of these small particles in the inspired air is the important factor. The determination of the number of particles is an engineering problem. While there are several methods, the impinger method is most widely used. This, in short, is a method of collecting dust particles from a known volume of air in a known volume of liquid, and counting the particles under a microscope.

"Concentration of 5,000,000 particles of pure crystaline silicious dust per cubic foot of inspired air probably constitutes the primary threshold under which a normal man may work for many years without impairing his health"[7]. This may not apply to silica in mixtures of other dusts. Certain rules and standards have been laid down in an effort to correlate the relation between the percentage of

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1, 2, 3, 4. Lanza, A. J.: Silicosis and Asbestosis. Oxford Press, New York, 1938.

5. Sayer, R. R.: Chairman committee on Pneumonoconiosis. American Public Health Association, Year Book, 1932-1933.

6, 7. Vorwald, A. J.: Dust and Pulmonary Disease with Special Reference to Silica Dust. New York State J. Med., 38:1103-1109, Aug. 15, 1938.

free silica and total dust counts in the causation of silicosis. Surveys of men working under certain conditions, where repeated engineering surveys have been made, as well as repeated physical and roentgen examinations of employed men have helped to establish these standards.

The medical committee of Secretary Perkins' National Silicosis Conference recommended the practical usefulness of an arbitrary standard which might be used as a control in industry. The following suggestion was made: Multiply the percentage of free silica by the total particle dust count; if the result is under five million, the condition may be permissible. While this may be fair, it does not completely solve the problem, as in a series of experiments with artifical mixtures of different dust materials and quartz, the SiO_2 content of the parent mixture, the SiO_2 content of the dust in the air of animal cages and the ash content of autopsied lungs after two years' exposure were very much at variance. The silicosis caused in animals' lungs did not follow the true pattern[8].

While the setting up of such a standard is an engineering problem, the interpretation of the results under such a standard is a medical one. Experimental work on animals has shown that injecting silicious particles one to three microns in diameter, six to twelve microns in diameter, and aluminum oxide particles one to three microns in diameter into the ear vein of rabbits shows, in the case of silica, the smaller size produced a coarsely nodular cirrhosis of the liver, while the larger ones were caught in the pulmonary capillaries and intermediate size in the spleen and hepatic nodes. Aluminum oxide particles produced no fibrosis in any organ, although they were of the same size and in the same quantity as the finer silicious particles[9].

The mode of action of the silicious particle seems to be that of chemical irritation rather than irritation of sharp edges. It has been shown that carborundum particles, one of the hardest known substances, do not produce the fibrosis typical of silicosis[10]. Injection of silicious particles into the peritoneal cavity of experimental animals has resulted in typical nodular formation.

The length of time of exposure to dangerous concentrations of dust must be considered. Silicosis is a slowly progressive disease and some time must elapse before physical or roentgen signs appear. Needless to say, where the exposure is to extremely high concentrations, the amount of silica inhaled is large and the reaction takes place in a shorter period of time. We have seen in our series of cases a number of young men with second degree silicotic nodules on the roentgenogram and physical symptoms moderately advanced, whose total employment in a dusty trade had been relatively short. Close investigation of these histories has shown that several of these individuals have worked in prospects or leasing operations with dry mining methods, where the dust hazard is many times that of the wet method now in use.

Under the average conditions existing today, it is rare to see evidence of silicosis in less than five years of exposure unless the dust concentration has been particularly heavy. This was found to be true in the survey in Utah metal trades[11].

Individual susceptibility must be taken into consideration. Sayer and Jones state their belief that, generally speaking, if there be any difference in individual susceptibility, it can generally be considered an acquired and not a congenital condition. Undoubtedy, abnormalities of the nasal passages and upper respiratory tract interfere with the removal of dust. Sinus infections, chronic bronchitis, bronchiectasis, emphysema and pleurisy all tend to lessen the ability of the respiratory tract to rid itself of foreign material. Here, however, we are apt to be dealing more with an infectious process, upon which the injury of the inspired silicious particle is superimposed[12]. Many writers differ on this point; however, death from uncomplicated silicosis is very rare and the whole factor of disability may be dependent upon superimposed infection.

PATHOLOGY

The pathology of silicosis in its very early stages is closely related to the various pneumonoconioses and a detailed discussion would be far beyond the scope of this paper. However, let us enumerate the defensive mechanisms of the respiratory tract: the ciliated cells and mucous secreting cells lining the epithelium of the nose, trachea and bronchi, the alveolar phagocytes and the lymphatic system. The lungs are supplied with two sets of lymph vessels, one in the pleura, and the other in the connective tissue in the sheaths of bronchi and blood vessels. These are connected by interconnections in the subpleural lobules. Where trunks communicate with others, there are masses of lymphoid tissue in the pleura, distal ends of alveolar ducts and at the bifurcation of vessels or bronchi. Inhaled dust in cases of benign pneumonoconiosis, especially if the dust is a pigmented one, will show flecks along the pleura, and in cut surfaces, linear deposits in septa between lobules, then streaks along branches of pulmonary arteries.

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[8] Fourth Saranac Laboratory Symposium on Silicosis, Employees Mutual Life Insurance Co., 1939.

[9] Gardner. L. W. and Cummings, D. E.: Reaction to Fine and Medium Sized Quartz and Aluminum Oxide Particles. Silicotic Cirrhosis of Liver. Am. J. Path., 9:751-753, Suppl. Oct., 1933.

[10] Sayer, R. R.: Third Saranac Laboratory Symposium on Silicosis. Employees Mutual Liability Insurance Co., 1937.

[11] Working Environment and the Health of Workers in Bituminous Coal Mines, Nonferrous Metal Mines, and Nonferrous Metal Smelters in Utah; Division of Industrial Hygiene, National Institute of Health; U. S. Public Health Service, Nov., 1940.

[12] Cummings, D. E.: Fourth Saranac Laboratory Symposium on Silicosis. Employers Mutual Liability Insurance Co., 1939.

Gardner[13] described the pathology as follows:

> "*Initial Phase.* As already intimated, silicosis begins like the reaction to any other particular dust, but the peculiar properties of free silica are responsible for subsequent modifications of the standard pattern. Migratory phagocytes concentrate silica in and about the lymphatic system of the lungs. The toxic particles, directly or indirectly through the released lipoids, stimulate connective tissue cells in their immediate vicinity and proliferation ensues. The ultimate result is a nodule composed of connective tissue, whose fibers are characteristically modified by the effect of the silica. The location of these nodules, situated in the immediate vicinity of the lymphatic trunks, impeded the free flow of lymph. Such a development of microscopic silicotic nodules in the tracheobronchial lymph nodes and intrapulmonary lymphoid tissues constitutes the primary phase of silicosis.
>
> "Grossly, these early nodular lesions are invisible or recognizable only with a magnifying glass. Usually there is enough carbon or other colored dust inhaled with the silica to produce the linear and focal pigmentation previously described for inert nonspecific pneumonoconiosis. Obviously a roentgenogram of such a lung will reveal the shadows of the perivascular deposits but not those of the nodular lesions that are too small to be seen without a microscope.
>
> "*Discrete Nodulation of Classic Silicosis.* After enough silicotic reaction has developed in the lymphoid tissue to retard the flow of lymph, fresh increments of inhaled silica are not as readily removed from the pulmonary air spaces. The phagocytes still ingest particles and migrate with them over the surface of the alevolar lining. Unexplained conditions in the lymphatics (possibly increased lymph pressures) now seem to prevent the cells from entering the vessels. As a matter of observation, most of them collect in groups scattered here and there on the walls of the air spaces. Again, the high local concentration of silica results in proliferation of connective tissue cells. Parenchymatous nodules now develop, which ultimately attain a diameter of 3 or 4 mm. They are characterized by the sharp definition of their borders, by their uniform composition of hyaline collagen fibers arranged either in concentric laminae or in coarse basket weave and by their regular distribution throughout all parts of both lungs."

The costophrenic areas of the lungs rarely show nodulation, and emphysema appears here due to the fibrous contractions of other portions of the lungs. In the later stages, larger areas of dense fibrous tissue appear. Dreesen of the Public Health Service, in a paper read before the Shoshone County Medical Society on October 23 of this year, demonstrated cases of complete collapse of the middle lobe of the right lung and the replacement by fibrous tissue. The roentgen appearance was that of a tumor mass several inches in diameter projecting from the lower mediastinum. Vorwald[14] has described the cavities occurring in the silicotic lung, typical tuberculosis cavities in minimal silicosis, in massive fibrotic lesions of silicotuberculosis, modified cavities differing in morphology and failing to give rise to usual symptoms until the disease has existed for a long time. The third occurred in massive lesions of conglomerate areas or fibrosis and which in his opinion were probably due to the local deficiency in the blood supply, and possibly to toxic action of high concentrations of silica[15].

These changes in the density of the lung tissues present a characteristic pattern in the roentgenogram of the chest. The first increase is in the perivascular marking, commonly called linear fibrosis, and is seen in benign pneumonoconiosis as well as following infections of the lungs, and is not characteristic of silicosis alone. This appearance has been aptly described as "the branches of a leafless tree." When the nodules are barely visible, the buds on the branches, clinicians almost universally classify as silicosis I, the linear markings here being greatly exaggerated. When the nodules reach a diameter of two or three millimeters, the linear markings are obscured and this stage is silicosis grade II or S_2. In the third stage, S_3, the nodules are from 3 to 6 mm., less clearly defined and with a tendency to confluence in certain areas. This is a rare picture, and usually superimposed infection is suspected or is clearly manifest.

INCIDENCE

The early investigations of silicosis were brought about in investigations of miners' phthisis, miners' consumption, and the disease to the "hard rock miner" is still known as "miners' con." Sayers[16] has shown that the incidence and mortality from infections of the upper respiratory tract, especially bronchitis, influenza, pneumonia, and pulmonary tuberculosis, are higher in miners than other trades, and higher in miners working in silicious than those in nonsilicious dust.

A survey by the Saranac Laboratory in 1930 of male and female population of Ottowa County, Oklahoma, in the tristate zinc-lead mining district, showed a tuberculosis death rate of 241.3 per 100,000 population, while that for the state was 39.9. Lanza and Vance in a survey of silicotics of many trades report a mortality from pulmonary tuberculosis about three times that of the general population. Animal experiments on guinea pigs and white rats has shown that silica definitely lowers the resistance of animals otherwise resistant and inhibits the development of acquired resistance.[17]

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[13] Gardner, L. U.: Pathology and Roentgenographic Manifestations of Pneumonoconiosis, J.A.M.A., 114:535-545, Feb. 17, 1940.

[14] Vorwald, A. J. and Delahant, A. D.: Influence of Silica on Natural and Acquired Resistance to Tubercle Bacillus. Am. Rev. Tuber., Vol. 38:347-362, Sept., 1938.

[15] Vorwald, A. J.: Cavities in Silicotic Lung., Am. J. Path., 17:709-718, Sept., 1941.

[16] Sayer, R. R. Pulmonary Diseases in Mining Industry; U. S. Bureau of Mines Circular 7146.

In humans the acute type of tuberculosis occurs in association with silicosis, but the lesions are more apt to be chronic. When the individual begins to show excessive dyspnea, cough, weakness and loss of weight, and the roentgenograms show coalescense of lesions in S_3 or S_2 with infection, the condition is silicotuberculosis. This has apparently resulted from the simultaneous action of silica and a few tubercle bacilli which have existed in a dense mass of scar tissue. No symptoms may be produced and no bacilli shown in the sputum for many years. Probably the investing scar tissue prevents absorption of toxic products. As age advances, the infective element seems to gain the upper hand and the cavities coalesce; bacilli appear in the sputum, and the individual shows the more classic effects of tuberculosis.

Vorwald and Karr[18], in a comprehensive review of literature as well as studies of silicotic lungs from autopsy material, concluded that carcinoma of the lungs was no higher in silicotics than in the general population.

SYMPTOMS

Dyspnea is the most prominent symptom, and may not be present at all in many silicotics. Orthopnea occurs rarely unless cardiovascular disease is present. Cough is the next common symptom. When present it is apt to be more pronounced in the morning. When beginning work after rest, it is usually dry and unproductive. Chest pain is often a late symptom in simple silicosis, but occurs in many other conditions. Hemoptysis is rare. Decreased chest expansion varies from slight to none in early stages, to marked in late stages. Prolonged expiratory notes on auscultation is a prominent finding in the more advanced stages. The percussion note tends to be dull over the apices and middle chest, with typical notes of emphysema in the bases.

When the most important phase, that of infection, is reached, all of the symptoms and signs may change. Productive cough, frequent upper respiratory infections, pleurisy, fever, hemoptysis and loss of weight occur. Clubbing of the fingers is in our experience not common and when it does occur, heart disease or advaned chronic tuberculosis accompanies it.

A careful history, physical examination, and adequate roentgenograms of the chest are essential in making the diagnosis. The history must include an exposure to silicious dust and the examiner must inquire carefully and have a knowledge of the possible sources of this material and the time which the worker has spent in dusty trades must be carefully gone into. Stereo plates of the chest are preferred, especially in the early stages. The laboratory is of little aid in the diagnosis of uncomplicated silicosis. Various workers have advised analysis of the silicious content of the urine. This has been shown to vary markedly with the diet, and is certainly of doubtful value[19]. When tuberculosis is suspected, frequent and detailed sputum examinations must be made. Guinea pig inoculation may be successful when sputum is otherwise negative. Blood sedimentation rates are valuable in establishing a diagnosis of tuberculosis, and is not changed in uncomplicated silicosis.

A number of cases of so-called acute silicosis have been reported. None of this has been seen in our mining district. In all cases there was reported an unusual exposure to high concentrations of unusually fine and pure silica. In nineteen of these cases autopsy reports have been made. These were not typical of classical silicosis. The content of silica in dried lung tissue was not as high as some cases of classic silicosis. Careful study has failed to reveal the cause [20, 21].

In 1939 a group of investigators at the University of Toronto[22] published the results of a series of experiments dealing with the action of fine aluminum particles on the action of silica and its toxic reaction on body tissues. They demonstrated that mixtures of quartz and aluminum dust in the inspired air of cage animals did not produce silicotic nodules after a length of exposure several times that required for quartz particles alone. Also, that animals exposed alternately to quartz and aluminum particles did not develop silicosis. Other investigators have shown that various dusts have an inhibitory action upon quartz particles[23]. Further work is necessary to establish the practicability of aluminum.

Beginning in 1935, one of the mining companies of the Coeur d'Alene region in Idaho started routine physical examinations of new employees and examination of those working in their mine. In 1936 and 1937 most of the larger companies joined in this policy. The examination consisted of a careful history as to exposure and illnesses, complete physical examination, and stereo roentgenograms of the chest, urinalysis, blood Wassermann and sputum examination where indicated. The information gleaned from this survey and the beginning of suits before the Industrial Accident Board for disability led to the enactment of an occupational disease law in 1940, with a special clause dealing with silicosis. Routine preemployment physical and chest roentgenograms are now mandatory in the mining industry of Idaho.

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[17] Vorwald, A. J. and Landau, A.: Influence of Dust on Tuberculous Infection. Arch. Path., 24:8-18, July, 1937.

[18] Vorwald, A. J. and Karr, J. W.: Pneumonoconiosis and Pulmonary Carcinoma, Am. J. Path., 14:49-58, Jan., 1938.

[19] Riddell, A. R.: Ontario Department of Health, Third Symposium on Silicosis, page 188.

[20] Gardner, L. U.: Fourth Saranac Laboratory Symposium on Silicosis, Employers Mutual Liability Insurance Co., pp. 236-238, 1939.

[21] Sampson, H. L. vide 20 supra., pp. 239-240.

[22] Denny, J. J., Robson, W. D., and Irwin, D. A.: Prevention of Silicosis by Metallic Aluminum. Canad. M. J., 40:213-228, April, 1939.

[23] Fourth Saranac Laboratory Symposium on Silicosis, Employees Mutual Liability Insurance Co., pp. 20-34.

Approximately 10,000 of these examinations have been made by our staff. For the purpose of this report, we have tabulated 7542 examinations. Of this number, 1299 had no exposure to silica dust according to their histories. They are included in table 1 because we desired to show the percentage of those having clinical or roentgen evidence of tuberculosis; 6243 had histories of exposure, varying from one to forty-five years. The table shows the number and degree of silicosis. Our method of grading follows the usual method with the exception that cases showing excessive linear exaggeration in the roentgenogram, we have called S_1. In other localities, this has been called "presilicosis." At Saranac Lake the excessive markings are called P_1 and P_2, according to the density of the markings. Those having silicotuberculosis show physical, roentgen or other laboratory evidence of tuberculosis.

TABLE 1

Number of men	*Grade of Silicosis*	*Total years employed*	*Average number of years*	*Extreme of years employed*	*Percentage of total*
1,299	S_0 (none)	....	....	....	....
1,933	S_0 (none)	6,711	3.5	....	31
1,967	S_1 (P_2)	12,338	6.29	not given	32
1,811	S_1	18,823	10.9	1-42	29
311	S_2	5,340	17.1	3-35	5
61	S_3	1,197	19.5	4-38	1
15	Tbc. without silicosis	45	3	0-14	.24
12	S_1 with tuberculosis	106	8.88	0-30	.19
24	S_1 with tuberculosis	301	12.5	2-24	.38
52	S_2 with tbc.	798	15.3	2-33	.83
57	S_3 with tbc.	1,212	21.26	2-45	.91
7,542	Total men.				
6,243	Men having an exposure to silica.				
145	Men having tuberculosis and silicosis; 2.32 per cent or 232 men per 10,000.				

Table 2 shows a recent survey of Idaho mines by the Bureau of Industrial Hygiene, Idaho Department of Health.

TABLE 2

Summary of Data Dealing With Dust Concentrations Encountered In Idaho Mines, Mills, Crushers, etc., 1940 and 1941 (26)

Operation	*Number of Samples*	*Dust Counts in Millions of Particles per Cubic Foot of Air Sampled*		
		Maximum	*Minimum*	*Average*
Rock drilling	78	102	1.8	14.7
Crushing, screening, conveying, etc.	65	294	0.7	36.0
Mucking	68	42	0.4	9.3
Airways, stations, etc.	29	38	0.3	3.7
Drawing chutes and ore handling, except mucking	38	53	1.5	11.1
TOTAL	278	294	0.3	16.7

In measuring dust concentrations indicated in the above table, dust samples were obtained with the all-glass modification of the Greenburg-Smith impinger apparatus (1), or with the Bureau of Mines impinger apparatus (2) and were counted by the Public Health Service technic (3) modified by the use of the Dunn cell (4) instead of the Sedwick-Rafter cell.

We feel that the disability from simple uncomplicated silicosis is not as great as might be assumed on roentgenograms alone. We have not employed vital capacity or related procedures in testing disability. Exercise tests such as used in life insurance examinations and those now used in examining draftees for the Army are sufficient in average cases, where a careful history and physical examination, together with adequate roentgenograms are performed.

CASE REPORTS

Case 1. Thirty years of age. Four years of mining in quartz mines in the state of Colorado (fig. 1).

Case 2. Age 33 years. Twelve years of underground work in the quartz mines in the state of California. General physical condition good (fig. 2).

Case 3. Fair physical condition. Shortness of breath on exertion, slight dry cough; repeated sputums negative. Fifty-three years of age, 25 years of underground work. Still actively employed (fig. 3).

Case 4. Age 33 years; thirteen years of work in Coeur d'Alene district mines with known exposure to high dust concentrations under dry mining conditions (fig. 4).

Case 5. Sixty years of age; over forty-two years of underground work. This man has very few physical signs and his general condition was good at the time this film was taken. Physical examination revealed a fixed chest with very little expansion. There was considerable dyspnea on moderate exertion. He is actively employed as a shaft foreman in a local mine (fig. 5).

Case 6. Positive sputum. This man died of silicotuberculosis three years later. At the time of the examination and this roentgenogram, he disclaimed any symptoms. There was impaired resonance, harsh breath tones and prolonged expiration. Rales were not present. Only moderate dyspnea on exertion (fig. 6).

Fig. 1. Early stage of increased arborization and fibrosis, not necessarily diagnostic of silicosis. Very faint nodules are beginning to form in this plate.

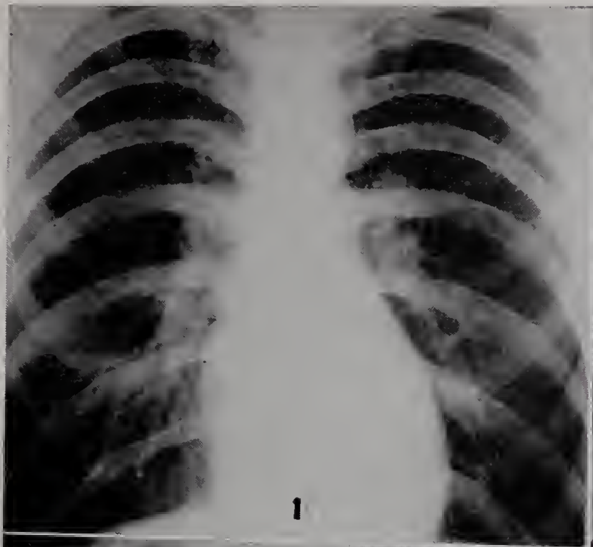
Fig. 2. Silicosis, grade I; discrete nodules and increased arborization.

Fig 3. Silicosis, grade II with coalescence of nodules, indicative of early infection.

Fig. 4. Silicosis, grade II. Frequent dry cough. Involvement of the left diaphragm from an early pneumonia.

Fig. 5. Silicosis, grade III with calcification of many nodules.

Fig. 6. Advanced silicotuberculosis with cavitation, coalescence of nodules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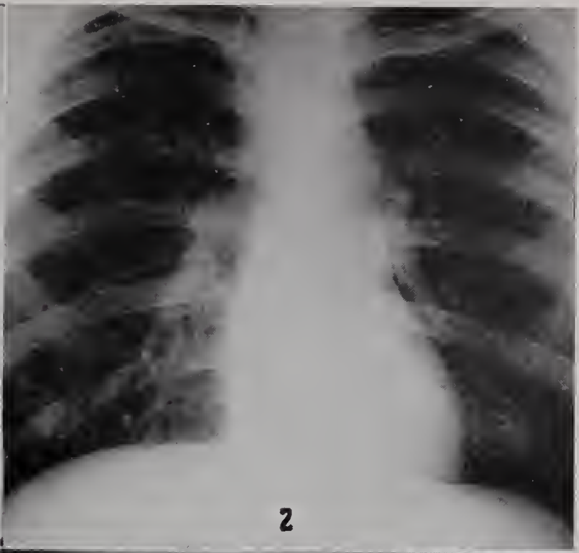
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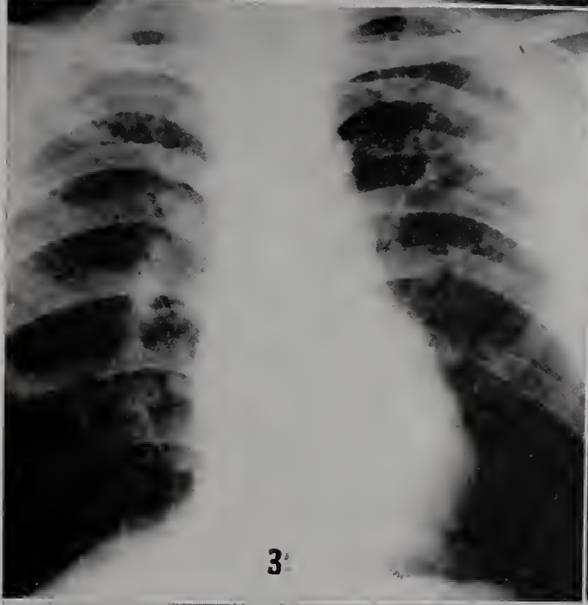
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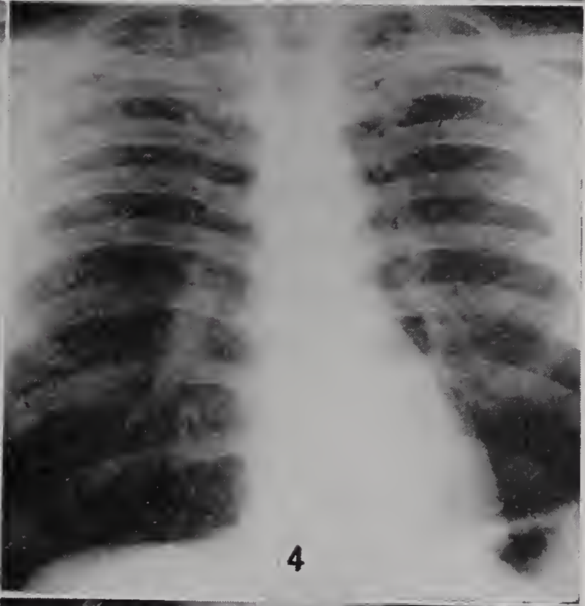
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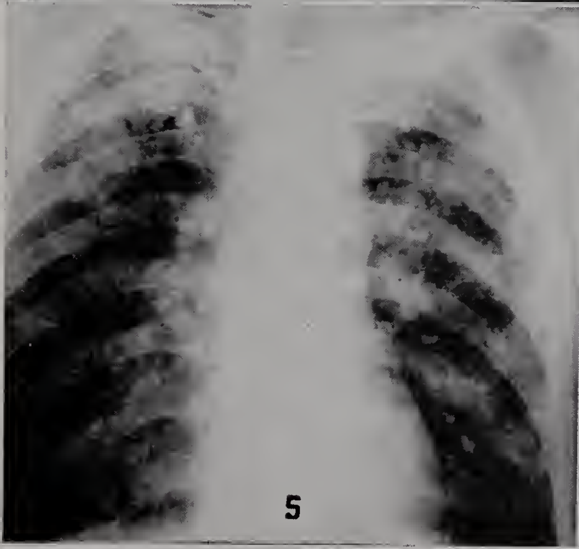
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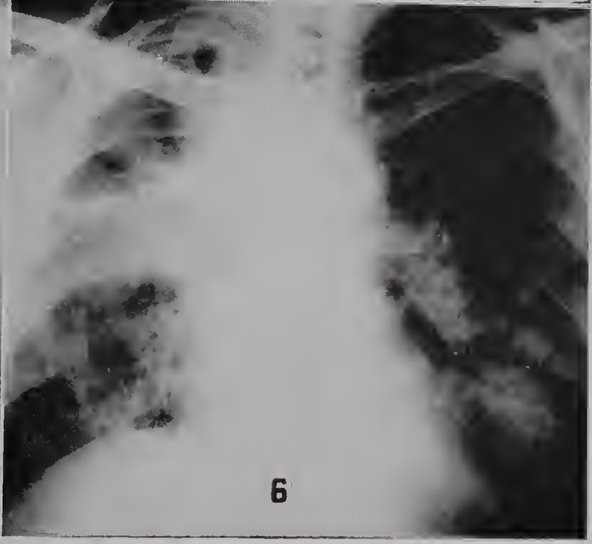
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TREATMENT

Superimposed infection is the greatest factor in bringing about an increase in dyspnea, cough and decrease in the ability to work. Tuberculosis is the most important item as shown by the tendency of silicosis to increase the susceptibility to this disease. Other causes, such as heart disease, hypertensive diseases incident to advancing age, must be considered. In many individuals, treatment of silicosis is entirely that of prevention. This is an engineering problem. Some important methods that have been employed for some time are the wet drilling method, blasting after the shift has left the workings, and spraying of muck piles to settle dust rising from them during handling; also, adequate ventilation of raises and stopes. Frequent surveys are necessary to determine the condition in the various working places.

Prevention of tuberculosis is a medical problem; frequent examinations of employees are necessary. Proper segregation and treatment of all cases of tuberculosis and survey of possible contacts must be done. Above all, contact of the silicotic with actual cases of tuberculosis must be avoided.

A man who has worked long enough under present conditions to develop silicosis, grade I or grade II is an experienced and valuable employee, and more especially so in these times. He may be better able to produce much more, if there is no superimposed infection, than an individual in perfect health with no experience in mining. If his exposure to dangerous concentrations of fine quartz particles is low enough to be safe, he may work productively with little danger in the light of present knowledge.

FIFTH ANNUAL FORUM ON ALLERGY

This international postgraduate society will meet in the Hotel Statler in Cleveland, Ohio, January 9-10, 1943. This forum will offer in most intensive presentation both the new and the old in allergy. The meeting will be characterized by its use of all the various types of instruction. Formal lectures, special talks, dry clinics, study groups, moving pictures, kodachromes, panel discussions, ending with an "Information On Allergy, Please," will all be used to teach physicians of the United States and Canada.

Not only will specialists in this new field of internal medicine gather but also those whose interests are in allied fields of medicine will be welcome, for in wartime every physician is called upon to advise and treat allergic patients. This is especially true of those in internal medicine, diseases of children, diseases of the skin, diseases of the eye, diseases of the nose and throat, as well as those engaged in basic research in immunology. A course in immunology as it applies to allergy will be given the week before by Dr. Eckers to a limited number of physicians and associates. Any physician interested in either or both of the foregoing is invited to write Dr. Jonathan Forman, 956 Bryden Road, Columbus, Ohio, for copies of the printed program and registration blanks.

SURGERY OF THE COLON*

HARVEY B. STONE, M.D.
Associate Professor of Surgery, Johns Hokpins University School of Medicine
BALTIMORE, MD.

It is probably a very foolish thing to take as a subject such a title as "Surgery of the Colon." Whole books, many monographs and innumerable articles have been written on phases of that topic, so that it is quite out of the question to try to cover the field in one brief paper. That is so true that I am not going to make any reference whatever to the many interesting rare conditions of the colon, nor to the various mechanical and developmental conditions that may require surgery, but shall limit myself to the general classification of inflammatory diseases and new growths involving the large bowel. Even on those subjects I can not attempt anything like completeness or thoroughness of presentation.

Under the head of inflammatory lesions of the colon, the first that I would like to bring to your attention is the disease which is now preferably known as lymphopathia venerea but which previously was called lymphogranuloma inguinale. This condition is interesting from many standpoints. It is probably a virus infection. The specific organism has not been identified and there is no specific treatment for it so far as I am aware. The reason that it comes into our discussion today is because in the female particularly, this infection produces long, indurated strictures usually in the rectum but not uncommonly extending above it into the sigmoid.

In the absence of any specific treatment for the condition and with the extensive organic changes in the bowel wall that take place in consequence of that inflammatory reaction produced, the treatment often becomes surgical. These strictures tend to become progressively tighter and longer, so that a certain number of patients with stricture of the rectum from this cause require colostomy to relieve the progressive obstruction which they suffer from, and the colostomy should be done high enough above the evident disease to protect it from extension of the disease upward. In other words, there is a risk, if the colostomy is made low in the sigmoid, that the progression of the disease may extend to and involve the colostomy so that a second colostomy has to be made at a higher level in the bowel. For that reason I would like to emphasize that where you have to do a colostomy for one of these long, tubular strictures you select a level in the bowel high enough to feel safe from such an extension of the progress upward, and that should certainly be in the upper part of the sigmoid and sometimes is best placed in the transverse colon.

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*Read at Sommer Memorial Lecture Course, University of Oregon Medical School, Portland, Ore., March 23-25, 1942.

Another inflammatory condition that is well known and also of obscure origin and unsatisfactory therapeutic status at the present time is the clinical picture which goes under the name of chronic idiopathic ulcerative colitis. There are many forms of ulceration of the colon. Numerous specific diseases cause this condition as infestation with the ameba distolytica, infection with one of the various strains of bacillic dysentery, tuberculosis, syphilis and other known infectious agents. After you have eliminated the known specific group of infection there remains this large residue of proved ulcerative colitis, in which a specific agent has not yet been demonstrated to the satisfaction of everyone.

It is likely that this is not a single disease. It is quite probable that we have a grouping together in this classification of several different specific types of ulceration, but as yet we cannot discriminate between them so that they have to be considered as a clinical unity. Many investigators have described what they thought to be specific organisms causing this form of infection. Bargan has his bacillus which is a strep with certain characteristics and staining properties that he thinks is the cause of the disease. Dragstedt has described another organism which is called bacillus necroforus, which he thinks has a causal relation. There have been numerous others but none of them have been proved, and I think it is quite probable that this group of so-called idiopathic chronic colitis represents a grab-bag diagnosis, in which various things are grouped together. The disease is worthy of much more time than I can give to it.

It occurs more frequently and is a more serious condition than many of us realize. It is true that many cases are mild, but also a good many of the mild cases are persistent and are apt to recur after an apparent recovery. It is also true that some of them are not mild. They may become fulminatingly dangerous and lead to death in a few weeks, and between these fulminating and mild cases there is a big group of progressive, serious ulcerative colitis, in which the colon is gradually, through months and years, deeply and irrecoverably damaged so that it is converted into a stiff, fibrous, scarred tube which is pretty nearly incurable.

For the mild cases, and for probably all in their early stages, I think it is best to regard them as within the domain of medicine as far as treatment is concerned. However, certain cases do not improve under medical care and the question then arises as to whether there is anything in addition to or as an extension of medical care, that may be done for these patients. Surgery has an answer. It is to divert the intestinal contents out of the colon so that this organ may be put at physiologic rest. This is best accomplished by the operation of ileostomy, in which the ileum, a short distance above the ileocecal valve, is brought up into the abdominal incision, cut in half, the lower stump closed, and the upper end brought out of the abdominal incision for a terminal ileostomy, so that the entire intestinal contents are diverted out of the colon. This is a specific application of the general therapeutic principle of rest to a diseased organ. It is the same idea as putting a tuberculous hip in a plaster cast. It is the relief of the damaged structure from physiologic function in the hope that rest may lead to healing and cure.

Three clinical results may follow from the ileostomy in treatment of this condition. (1) The disease may be cured and you may be able to close the ileostomy and return the alimentary tract to normal function again. I regret to say that that is the exceptional result. (2) The patient may get a great deal better but the disease, although arrested, may not heal. Those are the patients, of whom Dr. Dan Jones of Boston used to say, you cure the patient, but you don't cure the disease. The patient improves when he is free of fever, the anemia from which he suffers also disappears, and he is able to get about and resume his normal life; but when you look him over, you find that the disease is still present, quiescent but there. Those cases can not be closed, the ileostomy has to remain open. (3) This group includes those in which neither the patient nor the disease gets better in spite of the ileostomy. The process continues unabated and it may even progress. The discharge of pus and blood from the bowel continues in spite of diversion of the fecal stream. The anemia does not improve, the fever keps on, and then the question arises as to whether something further may not be necessary. In this group of cases, removal of the diseased colon often offers the only chance of saving the patient's life. This total colectomy of the diseased bowel is a formidable operation, but one which can be accomplished successfully, if the patient's general condition is proper and if the operation is attacked in stages so that too much is not undertaken at any one sitting.

Before leaving this topic of chronic ulcerative colitis I wish to say I believe that internists and surgeons alike are often too late in advising an ileostomy. I think more cases would fall into the first group of those who are really cured by ileostomy and more people could have their alimentary tract restored to function, if we advised an earlier resort to ileostomy. It seems to me too much to expect that a bowel, which has suffered extensive damage from long continuance of the ulcerative process, can be expected to return to normal. Therefore, the logical thing is to intervene before this advanced damage has developed.

I believe there is a guide which should be used more often in influencing the decision as to when to operate, that is, the frequent study by roentgenograms of the colon of a patient afflicted with this disease. When the colon begins to show a loss of contraction, a stiffening if its wall, and a tendency to the lead-pipe appearance which is characteristic of the disease, then I think you have evidence of the onset of deep organic ulceration in the gut wall and at the earliest appearance of such changes an ileostomy probably should be done.

It is difficult to get people to accept that point of view for two good reasons. One is that the ileostomy treatment is in itself a messy, disagreeable, formidable procedure. The patient who has an ileostomy has many things to complain of, so that the treatment is a deterrent in itself. The second reason is that so many cases of this disease undergo spontaneous regressions and improvements and both the patient and the doctors keep on hoping this case will get beter next week or next month and will put off operation, because maybe he will have a turn for the better and clear up on his own accord. That continued deferring of the operation in the hope of improvement leads in the aggregate to a long period of progression of the disease.

There is another inflammatory condition which interests me greatly and which has become of much general interest in the last ten or fifteen years. It is diverticulosis and diverticulitis of the colon. With more frequent roentgen study of the bowel it has been realized that many people, as they get into the middle ages of life, develop diverticula, usually multiple of the large bowel. They may occur anywhere, but most frequently are seen in the sigmoid. Without going into the theories of etiology, these really represent herniations of the mucosa of the bowel through the muscular coat, so that little pockets and bulges are formed along the course of the intestine, in which the mucosa lies directly under the serosa and forms a little hernial pouch. It is realized, with increased recognition of the frequency of this condition, that most of these diverticula are not of clinical importance. Usually they do not give any trouble or symptoms, but occasionally it happens that an inflammatory process starts in one of them and then you have the clinical disease of diverticulitis, usually in the sigmoid but it may be anywhere in the course of the colon.

Numerous cases are mild. The patient may have pain and soreness usually in the left quadrant of the abdomen, little tenderness on deep pressure, a little fever, mild leukocytosis, and from those simple, not severe attacks recovery is the rule and treatment is medical with low residue diet, mineral oil by mouth, rest in bed, ice bag or a hot water bag to the abdomen, careful avoidance of enemas. I think this is a point of considerable importance. We do not want to put fluid under pressure into a sigmoid which is the site of an acute diverticulitis. As a rule these mild cases clear up under this conservative form of treatment, but not all of them are so mild in origin, nor do all of them regress under medical care. Occasionally a fulminating attack of diverticulitis occurs with intense, severe, abdominal pain, high fever and all signs of a spreading peritonitis. For that condition we have exactly the same urgency for surgical treatment as for ruptured appendix or perforated duodenal ulcers or any other condition in which a hollow viscus ruptures into the abdominal cavity. That is the extreme, a case which requires immediate, emergency surgical intervention.

Between those two extremes there are the cases which perforate slowly and form abscesses that have to be drained, and the still more slowly progressive cases in which there never is a perforation, never an intense, acute, inflammatory process, but a slow, chronic, progressive process with fibrosis of an area of the sigmoid, with constriction of the lumen, and a slowly progressive incomplete intestinal obstruction. These cases sometimes may be confused with malignant disease. Sometimes there is a palpable mass and the roentgen appearance of this chronic obstructive form of diverticulitis may be confused with that of carcinoma of the sigmoid. As a rule these slowly progressive forms produce a low grade obstruction and may require a colostomy for relief of the obstruction, and following this, a resection of the area involved and a reanastomosis to reestablish the intestinal tract.

There is one complication of diverticulitis that may lead to grave and serious trouble, the tendency of the sigmoid affected by diverticulitis to adhere to and perforate into the surrounding viscera. It may extend into the small bowel, but it frequently perforates into the bladder. One word I would like to leave with you in regard to that situation. Twice I have observed a patient who had known diverticulitis of the sigmoid who had been treated conservatively through one or two acute attacks, had recovered and then developed another attack with a new symptom, the beginning of urinary urgency, frequency and pain on vomiting. With the onset of that symptom, it seemed to me imperative that the delay be stopped and the patient operated upon, because I thought that was a case in which the sigmoid was stuck against the bladder, involving it in inflammation and danger of perforation. As a matter of fact, that was exactly the condition found at operation. The sigmoid was adherent to the bladder by inflammatory adhesions and was with some dificulty separated from it, before actual perforation had taken place. To sum up, I think the principle of treatment of diverticulitis is conservative medical care in general, the exceptions being those cases which perforate acutely, those which lead to abscess formations, those which begin to form obstructions and, finally, those with threatened fistula formation into the urinary tract. In all those later groups it seemes to me that the surgical attack is essential.

I have talked so far about inflammatory diseases that affect the large bowel. The most important pathologic conditions which involve the colon are those of a neoplastic nature. That is true for many reasons; in the first place, the gravity of the disease, and in the second place its frequency. I do not recall the exact statistics, but if you take the colon as a whole, I think it is true that, with the possible exception of the stomach, malignancy affects the colon more often than any other internal organ. At any rate, the colon ranks very high as a site for malginant disease from the statistic standpoint. It is also a highly important thing to think about, because it is a field in which we could do much more than we are doing at the present time.

If it were possible to recognize early the onset of malignant disease in the large bowel, it would offer an extremely important field for improvement of our results. It is a structure which, generally speaking, can be operated upon under conditions of present-day technic with a high degree of safety. You can remove large areas of it without serious physiologic disturbances to the patient's health and the results of those cases which are favorable for operation are tremendously gratifying. It is a rough approximation of the truth to say that, out of those cases that are operated upon and found suitable for radical attempts at surgery, between forty and fifty per cent are alive and well at the end of five years.

The next point I wish to bring before you is early diagnosis and the unsatisfactory state in which it has been and is still in the medical profession. The reason for it is that malignancy in general has no pathologic clinical signs. It crawls on the patient insidiously and he does not know there is anything wrong with him until some of the complications of cancer set in. Until the growth becomes ulcerative or infected, or its size and pressure by obstructive symptoms call attention to it, the patient is not aware of anything being wrong. When we speak of early diagnosis, we have to reckon with the fact of this lag between the pathologic growth of the disease and the first appearance of clinical symptoms. The second trouble is that for many years the textbooks and the teaching of medicine have presented a picture of cancer, particularly of the large bowel, which is perfectly true, but which is one of the advanced stages of the disease. When you read or speak of cancer of the colon being associated with such symptoms as marked loss of weight, cachexia, a palpable mass, nausea and attacks of partial obstruction, you are presenting a picture of the advanced stage of cancer, not of the early stages.

The early symptoms are difficult to recognize, the first being the period of no symptoms, the second that of slight, obscure and insidious symptoms. The only way they can be combatted is by development of a mental attitude of suspicion on the part of the profession, and particularly of the general practitioner toward certain symptoms in people of middle life or older. These are particularly very vague in their early phases. There may be transitory gas pains, rumblings in the intestinal tract, tenderness and soreness, little disturbances of bowel function, but nothing more than the patient accounts for by some dietary indiscretion and these symptoms in the early phases are often not continuous. The patient has a week or so of this upset, as he calls it, and apparently gets all right again and he may go two or three months before he has another bout with these same abdominal disorders. Only after he has had six or seven months of it, does he think it is time to see a doctor, and very often the doctor is apt to minimize the importance of the thing.

When a patient in this age group presents himself with these vague symptoms, I would like to make a plea that certain specific examinations be carried out. This patient may not have malignancy of the colon and the chances are that a large number of people with such vague symptoms do not have cancer of the colon, but they may have and it is the duty of the doctor to exclude that possibility.

What are the processes of study? In the first place, the ordinary clinical examination may not show anything that you can pin down, or there may be an area of the abdomen which is a little tender on deep pressure or possibly you can feel a mass. If the growth is in the midtransverse colon or in the cecum, you have a better chance of feeling it than if it is in the splenic flexure, the descending colon or low in the sigmoid. In those regions I believe you can rarely feel the mass. Frequently the patient shows a marked secondary anemia and particularly is that true with growths on the right side of the colon. In fact, when a patient in the last half of life presents himself with a secondary anemia which is otherwise unexplainable and for which no reason can be discovered, it is a good thing to remember that it is in order to suspect he may have a carcinoma on the right side of the colon and to direct study toward that end. Often these people have unsuspected bloody mucus in the stool, which they have not noticed. Therefore, study of the stool microscopically for the presence of mucus, occult blood or microscopically visible blood may be a lead toward the diagnosis. Remember, however, that the blood in the stool can be present from many sources and many pathologic causes, that cancer of the large bowel is one of these causes and should be considered as a possibility until it is excluded. A proctoscopic examination of the rectum will often clearly prove the presence or absence of any growth within the lower ten inches of the bowel. You can not always see that high, but within the reach of your instrument you can say yes or no as to the presence of cancer.

Finally, roentgen study is of the greatest help and I should like to say it should be a barium enema study. One should not depend upon a gastrointestinal series with barium administered by mouth. It is perfectly possible by that technic to overlook a lesion which would be disclosed if the study were made by the vehicle of a barium enema.

There is another group of patients, one of the most interesting of all, who do not present symptoms that they recognize as a deviation from normal until they appear with an acute, fullblown, mechanical obstruction. Among the causes of acute obstruction in elderly people must be reckoned carcinoma of the bowel, and that type of onset is nearly always with the growth on the left side, particularly, the so-called napkin-ring encircling carcinoma in the sigmoid. The distinguishing feature of right-sided growth is the tendency toward secondary anemia, the distinguishing feature of left-sided growth being the tendency toward acute obstruction. If one is suspicious of the possibility of carcinoma and will study the case from that standpoint by the methods just described, I am quite confident a larger number of early cases will be presented to the surgeon.

What is the treatment? I feel that the treatment for carcinoma of the large bowel is purely and simply surgery. That will not be agreed to by everyone. There are good men in the field of roentgenology who feel that radiotherapy in one form or another does have a place in the treatment of these diseases. I think that place should be limited to cases in which surgery does not offer either curative or palliative hopes.

I do not wish to discuss exact surgical procedures at this time. I wish, first, to point out that the primary purpose of surgery is to discover whether or not the disease is amenable to radical cure, so the first thing is an exploration of the abdominal cavity. Many circumstances will indicate that the condition cannot be cured. For instance, if there are large nodules of metastatic cancer in the liver, extensive invasion of the retroperitoneal space, wide lymph gland involvement, or if the growth has extended by direct invasion into the abdominal wall, the bladder or adjacent loops of bowel, the likelihood of cure is very slight. So the first thing is the determination of the chance for a permanent cure.

The next process, in those cases in which cure is expected or hoped for, is application of the principle of surgical removal. Those principles apply in the colon as well as the breast, lip or any other area approachable by surgery, which means the removal of the growth with an adequately wide area of the organ involved and within the region of lymphatic drainage from the diseased spot. In the colon that often can be done without any difficulty whatever. You can take out a large segment of bowel with associated mesentery and glands, or the glands behind the peritoneum if it is on the right side of the colon. What you do with the alimentary tract after removal of the diseased portion is a "fielder's choice" in many instances.

I will not go into the question here, which is a field for surgical debate, as to whether it is desirable to do a primary colostomy and then resect the bowel, or to resect the bowel and do a temporary colostomy afterwards, or do a resection and immediate anastomosis. Those are questions that involve surgeons and they do not interest us now, but the principle of wide removal everyone agrees to and then the reconstruction of the alimentary tract where that is possible. Sometimes in the lower part of the large bowel, in the rectosigmoid and in the rectum it is not possible to reestablish the alimentary tract and in such cases a permanent colostomy must result.

What is there to do for patients, in whom cure is out of the question? Surgery offers several palliative opportunities even there. The simplest is a short-circuiting operation around the area of the growth so that the bowel above and below it may be united by an anastomosis and the obstruction thus sidetracked. That precludes future obstruction. I think, however, that a better palliative procedure is removal of the growth itself, although you are not going to cure the patient. To take a concrete example, suppose a patient has a growth in the middle of the transverse colon and at the time you explore him you find numerous goodsized nodules in the liver. No matter what you do, with our very unsatisfactory measures of attack on cancer, nothing is going to cure him. But you can palliate the patient's condition by an anastomosis around the growth. However, it seems to me in such a case it is preferable to resect the disease in the bowel and do an anastomisis rather than do just a short-circuiting operation. The reasons are that removal of the growth gets rid of a source of irritation, blood, mucus and pus in the stool. You get rid of a focus of infection from which absorption can take place, and besides you can tell the patient that the mass has been removed and this is a tremendous psychologic advantage.

I don't know how other surgeons feel about telling a patient, if you are pinned down, "No, I couldn't do anything for you; I am sorry, we just had to sew up the wound." The effect of such a statement on the patient and the family is prostrating as a rule. When I can honestly say to them, "We could not get everything out that we would have liked to remove, but we have got the tumor and you are going to be a great deal better, and I think you will find that in a few weeks your strength will be improved and restored," the psychic pick-up is worthwhile.

In conclusion, I want to revert once more briefly to the place for radiation treatment in carcinoma of the large bowel. It should be limited to those conditions in which surgery offers neither opportunities for radical cure nor for the palliative procedures that I have just described. There are such cases. For instance, in the rectum, where there is an extensive infiltrating growth that is obviously inoperable. Sometimes those growths prove to be extremely radiosensitive.

In my experience that is very exceptional, most of them being radioresistant, but occasionally the growth in that region is strictly radiosensitive. A few times I have had the experience of seeing the growth melt completely away under radiotherapy so that all the patient's symptoms were cured, that is to say, the tenesmus, or frequent, urgent desire for bowel movement, presence of bloody mucus and all the rest that bothered the patient were abolished. I regret to say, however, that in not a single one of these instances was the patient really cured. In all of them in the course of a few months or a year or two they died from metastatic cancer in spite of the remarkable yielding of the primary growth to radiation. I am unable to give you any satisfactory explanation of why the disease which seems to be so sensitive to this form of therapy should still progress and kill the patient from location in other places and in other forms. I feel, therefore, that radiation therapy is worth a trial in those cases where neither radical surgery for cure nor palliative surgery is suitable.

THREE NEW YORK PHYSICIANS REPORT ON USE OF A SPRAY MADE UP OF A SOLUTION OF SULFADIAZINE AND TRIETHANOLAMINE

Treatment employing 2.5 per cent sulfadiazine, a member of the sulfanilamide family of drugs, in 8 per cent triethanolamine, an emulsifying agent and solvent useful for applying certain medicaments to the skin, was found to be valuable in 30 of 32 patients with second and third degree burns, Milton Rothman, M.D.,; Joseph Tamerin, M.D., and Jesse G. M. Bullowa, M.D., New York, report in *The Journal of the American Medical Association* for November 14. The area burned varied from 12 to 45 per cent of the body surface. This recovery rate is very high in view of the severity and extensiveness of the burns. The treatment they used is a modification of one reported last year by K. L. Pickrell, M.D., at Johns Hopkins Hospital.

The solution was applied by spraying on the surface of the burrn every hour on the first day, every two hours on the second day, every three hours on the third day and every four hours on the fourth day. The wound was dried by fanning or with warm air after each application. A translucent scab formed in twenty-four to thirty-six hours and alleviated pain and the need of frequent dressings. There were no reactions from the sulfadiazine and the solution may be employed without irritation or constriction about the face, mouth, eyes, joints and fingers.

LOWER HALF HEADACHE*

SYMPTOMS AND TREATMENT

Moray Girling, M.D.
LONGVIEW, WASH.

The large number of patients referred for varying reasons, such as refraction, sinus disease, etc., who in reality are suffering from lower half headache, and who have been entirely undiagnosed, except in those cases which are labelled migraine and left at that, has prompted me to bring before the profession at large some of my observations in this common syndrome. During the past six or eight years some seventy-five cases have come under my care, all of whom have demonstrated to a greater or lesser degree symptoms referable to the sphenopalatine ganglion.

My attention was first drawn to this syndrome by a patient attending the Out Patient Department of the Vancouver General Hospital in Canada. She complained of violent headache accompanied by nausea and vomiting, occurring at least twice a week. She also suffered from chronic suppurative otitis media on the same side as the usual site of headache.

Consultation with a prominent otologist resulted in a recommendation that radical mastoidectomy be performed. Before this was undertaken the ear dried up. The headache, however, continued. Cocainization of the sphenopalatine ganglion immediately relieved the pain. This was followed by injections of 95 per cent alcohol and 5 per cent phenol with complete cessation of all evidence of headache.

SYMPTOMS

The average patient consulting me has complained of the following symptoms: (1) headache of varying intensity in different attacks, more often starting in the left frontal region than in the right; (2) in some instances this is preceded by aura, but is often without warning. The syndrome starts as a dull ache gradually increasing in intensity and finally involves the whole cranium, and at its greatest height it is attended by vomiting preceded by nausea.

Distribution of pain is somewhat irregular, but follows a general pattern. There is often considerable tenderness over the frontal sinus which resembles frontal sinusitis for which it is often mistaken. It extends posteriorly to the occipital region. A point of tenderness may be demonstrated about 4 cm. behind the mastoid process. Stiffness of the muscles of the neck posteriorly is also complained of, with pain radiating at times to one or both shoulders.

In one or two cases pain has extended to the midthoracic region, producing a spasm of the muscles along the spine. Pain in the upper jaw is quite common, simulating toothache. Earache is also complained of and occasionally pain in the throat. Vertigo is very common, together with hyperacusis. Audiometer readings confirm this condition. The patient complains that the least sound increases the intensity of the pain. There is often a congestion of the conjunctiva on the side on which the pain is most severe. The pain is described as of a boring nature, situated deep in the orbit. It has been observed that in the more severe cases both male and female patients are of the oversexed type.

The fact that the application of cocaine directly to the sphenopalatine ganglion relieves the pain is finally diagnostic of the condition. This application can be easily made with cotton soaked in cocaine solution applied above and behind the middle turbinate bone and into the sphenopalatine fossa on the lateral wall of the nose.

A brief description of the anatomy and the distribution of nerve fibres is as follows:[1, 2, 3] The ganglion is located in the sphenopalatine fossa very close to the sphenopalatine foramen. It is suspended from the maxillary division of the trigeminal nerve. It lies close to the lateral wall of the nose and is easily accessible for treatment.

The ganglion is composed of four main groups or branches, an internal or nasal group, a descending or palatine group, a posterior group and an anterior or orbital group. Through these branches is the terminus of three great systems, the trigeminal, facial and sympathetic.

The roots of the ganglion are sensory, motor and sympathetic. Too much space would be required to establish the anatomic connections more fully. A wide distribution of symptoms is, however, possible through its connection with the great superficial petrosal which arises from the facial nerve.

It has long been my opinion that this syndrome has an allergic background. The basis for this belief is as follows: (1) all these patients complain of varying degrees of nasal obstruction with postnasal drip; (2) examination of the nasopharynx reveals an edema of the posterior ends of the turbinate bones; (3) in some instances the pain has been relieved by shrinkage of the mucous membranes; (4) eocinophilia has been demonstrated in nasal smears of a number of these patients.

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*Read before a meeting of Cowlitz County Medical Society, Longview, Wash., Oct. 21, 1942.

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Comparatively recent publications have demonstrated the relationship between estrogenic substance and postnasal congestion.[4, 5] This, combined with the observation that all these patients are of the oversexed type, has suggested to me that the causative allergen is estrogen or some other long extinct sex manifestation, such as is present in animals during mating season. This is further demonstrated by presence of pre- and postmenstrual headaches, at which time there is an increased flow of estrogen. By this it is meant to convey that man no longer requires his nose as a sex organ.

The swelling and congestion produced by this allergen set up an irritation of sphenopalatine ganglion, bringing about the syndrome by virtue of distribution of nerve fibres radiating from and to the ganglion.

TREATMENT

It has been said that cocaine will relieve this pain. One application may be sufficient to completely abort an attack. Silver nitrate has also been used with relief of symptoms. This produces considerable irritation. Pure phenol has been used with reported good results. Alcohol with phenol injected into the ganglion is followed by a short period of increased pain, following the distribution usually manifested. This is followed by a complete cessation of pain.

The patient's disposition and mental outlook are entirely revolutionized. This, however, is temporary and to many patients objectionable. The greatest length of time in my experience for which this relief has lasted has been three years. The shortest from six to nine months. Second injections have not proven to have any lasting effect.

Recently I have used histamine diaphosphate with encouraging results. Several cases have apparently been entirely relieved. This treatment is based on the apparently allergic background which has been previously mentioned. It is, however, too early to determine how permanent these results will be. The same change in disposition and mental outlook has been noted. It is hoped that this paper may stimulate more interest in this condition. In the near future I hope to be able to give further details and results of treatment with histamine diaphosphate.

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[4] Mortimer, H., Wright, R. P. and Collip, J. B.: Effect of Estrogenic Hormones on Basal Mucosa. Their role in Naso-Sexual Relationship; and Their Significance in Clinical Rhinology. Canad. M. A. 35:615-621, Dec., 1936.

[5] Schelesnyak, M. C. and Rosen, S.: Naso-Genital Relationship. Endocrinology. 23:58-63, July, 1938.

ACTINOMYCOSIS OF THE LUNG

MINIMAL INFECTION

H. S. Atwood, M.D.
Capt. M. C., U. S. Army
FORT GEORGE WRIGHT, WASH.

The following case report of pulmonary actinomycosis supports the view previously expressed that the organism is common, although actual disease is rare. Mild minimal disease may exist and may be missed if not specifically searched for.

Private F. H., age 33, entered Fort George Wright Hospital August 29, 1942, complaining of chilling and slight sore throat and slight cough. He had done duty until the night before.

His father and mother were from Texas and Georgia respectively, and moved to Toronto, where he was born and lived until he was fifteen, when he went to work in various mining and milling activities. He never worked underground. He operated a mill and prospected in Quebec. He also worked at refining and prospecting in the Carolinas. The only very dusty work which he did was in 1930, in a testing laboratory, where there was good ventilation, and he wore a respirator.

The only time he was ever around animals was one year in 1924, when he had a cow, and he had a dog team while in Quebec. During his mining days routine roentgenograms were taken of his chest for silicosis with negative findings.

His medical history is uninteresting and shows the usual childhood diseases, mild pneumonia at age of six and tonsillectomy at twelve, following repeated sore throats. He denies ever having jaundice. He smokes one-half package cigarets daily, drinks an occasional beer. He had a wisdom tooth pulled in November, 1941, and three small cavities filled. The last previous extraction was in 1929 and the last previous fillings in 1936.

For many years he has had two or three colds each year, mostly in the winter, with two to three days lost. He has had trouble with his nose, like a head cold, all his life with nasal discharge. His health was best in Quebec with temperatures of 40° to 50° below zero.

After being inducted at Fort Belvoir, he had a rhinitis and pharyngitis which lasted eight weeks. He was sent to Salt Lake, where he improved but his nose was still irritated. After eight days he came to Felts Field, Spokane. The dry air agreed well with him. Just before coming to the hospital the weather was cold and he felt chilly and began to cough a little more. He admits coughing a little ever since he was at Belvoir (three months); in fact, he has coughed a little all his life.

Physical examination. Does not appear acutely ill, but not robust. Height 65½ inches, weight 122 lbs., usual weight 132 lbs., blood pressure 120/72, temperature 99.6°, pulse 84, respiration 18.

Skin clean, gums and teeth in good condition, throat clear and not inflamed. Neck normal except for moderately enlarged lymph glands in both anterior triangles.

The thorax expands well. Coarse bronchial rales heard anteriorly in upper left chest. Crepitant rales are heard in the left posterior at level of the seventh rib. No other rales, even on expiration and cough. No changes in fremitus or percussion. Heart, no pathology demonstrable.

The remainder of the examination was essentially normal. Because of the rales a film of the chest was made on August 30, and reported as follows:

Roentgen examination of the chest, including stereograms and lateral projection, reveals a comparatively dense infiltrative process extending from the left hilus to the midlung fields in the lower portion of the left upper lobe. The peripheral lung fields and apices are clear.

Heart and aorta are normal in size and contour. Diaphragms are normally elevated.

Impression: (1) bronchopneumonia, lower portion left upper lobe, (2) suggest reexamination in one week, to rule out the possibility of neoplasm.

The clinical course was unusual in that there was normal T. P. and R. except for the one entrance fever of 99.6°. The cough subsided after a couple of days and the slight production ceased. Because of the lack of toxemia the sulpha drugs were not administered, but rather aspirin, phenacetin and elix. terpin hydrate and codeine. Another roentgenogram, taken September 4, showed as follows:

Reexamination of the chest in comparison with the film taken August 31 reveals a partial absorption of the pathology present immediately inferior to the left hilus. However, there is still a moderate amount of inflammatory process as yet present. This pathology is apparently an absorbing pneumonitis.

The patient was feeling quite well. Because of the great discrepancy between the roentgenograms and the symptoms subjectively, a request was made for a sputum search for molds. A small amount of sputum obtained September 11, showed typical actinomycosis, as did subsequent specimen.

September 11, stain for mold. Actinomycosis hominis seen. September 12, actinomycosis hominis.

Our Fort George Wright pathologist reports as follows:

Oct. 4, sputum examination: Microscopic examination revealed small yellowish granular bodies.

Microscopically under low power the granular bodies consisted of closely meshed filaments in a rosette-like arrangement. The tips of the filaments were blunt, with a tendency to clubbing.

Diagnosis: Actinomyces hominis.

The cough was very slight and the small amounts of sputum were produced without effort. On September 16, patient weighed 127 pounds. He complained of nasal irritation and slight cough at times, but otherwise felt perfectly well. A film September 16 shows:

Reexamination of the chest reveals a consolidation of the left hilus of the previously described area to be completely gone. The chest at this time, roentgenologically speaking, is essentially negative.

Another taken September 30 shows:

Reexamination of the chest in comparison with the film taken September 5 reveals complete clearing of the previously reported pneuminitic process in the left hilus under date of August 31. At present one gets the impression of an essentially negative chest.

Another positive sputum was obtained October 5, following an acute rhinitis.

On first diagnosing Actinomycosis, potassium iodide was started, but on reviewing the literature this was stopped, being considered futile, and sulphanilamide was started with the intention of continuing it over a long period. The prognosis is questionable.

DISCUSSION

Potassium iodide seems to be the first drug thought of in treatment. Many report its use even up to 400 grains a day, but no one reports a cure or even benefit from its use. One case cured by thymol is reported. Roentgen therapy and surgery are recommended. The sulfonamides seem to offer the most promise.

The probability of widespread infection of the mouth in the presence of good oral hygiene has been brought out.[1,2]

Others have written of the occurrence of lung actinomycosis without lung symptoms. In these cases death was due to pathology elsewhere, and the lung actinomycosis was found only at autopsy.[3]

It is stated that not all individuals who harbor the actinomyces develop the disease. There is no individual susceptibility which plays a large part. Tonsils and carious teeth are considered as starting points of actinomycotic infection in man.[4]

On going over the literature I am impressed with the idea that pulmonary actinomycosis is acquired by aspiration of infected material. This especially applies to aspiration of particles of infected teeth during dental repair or extractions.

SUMMARY

A mild minimal infection of the lung with actinomycosis is reported. The diagnosis was made during the height of a common cold, and the patient believes he is in good general health. He is being treated with sulfanilamides.

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AMERICAN MADE ATABRINE IS AS GOOD AS THAT MADE IN OTHER COUNTRIES

American made atabrine, a substitute for quinine in the treatment of malaria, is as good as that made in any other country, *The Journal of the American Medical Association* declares in its November 14 issue. *The Journal* says:

"The most prevalent disease afficting the populations of the world is undoubtedly malaria. How many cases occur each year is not known, but estimates place the number as high as 800,000.000. In local areas, particularly in the United States and Panama, drainage and sanity engineering projects have had some influence on the incidence of malaria, but such measures cannot cope with the disease on a worldwide basis. Until 1932 the populations of the world were principally dependent on quinine and its derivatives for protection against the malady. With the discovery of atabrine in 1942 a new and potent addition to the antimalarial armamentarium made its appearance. When the Netherland East Indies fell to Japan, the source of practically the entire world supply of quinine was lost tto the United Nations. Atabrine, now officially recognized under the nonproprietary name quinacrine, assumed a role of unsurpassed importance as a strategic drug. Although it was originally prepared in this country from imported intermediates, in 1941 American chemists solved the problem of synthesizing the drug through intricate steps. The question has been raised whether the American atabrine is identical in all respects with the German drug. The report released by the National Research Council establishes the fact that there is no longer reason to doubt that the drug manufactured in this country is genuine, comparable in every respect with that produced in other countries."

STATE SECTIONS

OREGON STATE
MEDICAL SOCIETY

SIXTY-NINTH ANNUAL MEETING
1943

OREGON WAR EMERGENCY HEALTH COMMITTEE

REPORT OF FINDINGS AND RECOMMENDATIONS CONCERNING PUBLIC HEALTH, HOSPITAL, AND PROFESSIONAL SERVICES TO SERVE PORTLAND'S EXPANDING POPULATION

Organization of the Committee

The Oregon War Emergency Health Committee was organized under the leadership of the Oregon State Medical Society following a conference with Edgar F. Kaiser October 23, 1942. At this conference, Mr. Kaiser stated that the Oregon Shipbuilding Corporation and the Kaiser Company, Incorporated, Swan Island Division, contemplated the employment of 30,000 additional workers during the next few months which would increase the population of the Portland metropolitan area by approximately 90,000 persons. Mr. Kaiser asked the Society to provide information and made recommendations regarding the need for expansion of existing institutional and professional facilities.

The Oregon State Medical Society invited all the professional societies and governmental agencies concerned in the provision of public health, hospital and professional services in the community to appoint representatives to the Committee to participate in the task of determining the facts and formulating recommendations.

The Committee as now organized consists of representatives of the following professional societies and governmental agencies:

Oregon State Medical Society
Multnomah County Medical Society
Portland Branch of the American Medical Women's Association
Clackamas County Medical Society
Oregon State Dental Association
Portland District Dental Society
Oregon State Nurses Association
Oregon Association of Hospitals
Portland Council of Hospitals
Oregon State Board of Medical Examiners
Oregon State Board of Dental Examiners
Oregon State Board for Examination and Registration of Graduate Nurses
Oregon State Board of Pharmacy
Oregon State Advisory Committee to the Procurement and Assignment Service for Physicians and Dentists
Oregon State Board of Health
Multnomah County Health Department
Portland City Bureau of Health
Visiting Nurse Association

Todd Woodell, executive assistant to Mr. Kaiser, represents the Oregon Shipbuilding Corporation and the Kaiser Company, Incorporated, on the Committee. Clyde C. Foley, executive secretary of the Oregon State Medical Society, is acting as secretary of the Committee.

Statement of the Problem

Portland has an outstanding health record and a national reputation as a medical center which provides a high-type medical, dental, nursing and hospital service. The problem is to plan and execute measures that will ensure the maintenance of our present standards of health among an additional 90,000 persons by providing them with adequate public health, hospital and professional services, bearing in mind that many newscomers will come from other communities with lower health standards, and of necessity will be housed here in temporary dwelling units that are substandard with respect to location, size and type of construction.

Method of Survey and Formulation of Recommendations

Members of the Committee representing the various professional societies and governmental agencies formed subcommittees to obtain the facts and submit recommendations concerning the respective phases of the problem with which they are concerned. The following report of the Committee as a whole combines and coordinates the findings and recommendations of these subcommittees.

Public Health Facilities and Needs

The Committee is of the opinion that the most acute phase of the problem arises from the possibility of epidemics of contagious diseases, due to the fact that many of the new families will live in concentrated housing units that are substandard with regard to location, size and type of construction. For this reason, the basic approach should be from the standpoint of protection against such epidemics.

Responsibility for the control of contagious diseases within the city rests with the Portland City Bureau of Health and in the remainder of Multnomah County with the Multnomah County Health Department. Both these agencies are well organized and are providing an up-to-date public health service. Both enjoy a high degree of cooperation from the medical profession. Due to the joint efforts of these agencies and the private physicians, the percentage of the population protected against the common contagious diseases is high, as is evidenced by the fact that the most recent survey showed that in Portland 87 per cent of the school children and 47 per cent of the adults have been vaccinaetd against smallpox. A high percentage of protection against diphtheria also obtains. Great progress has likewise been made with respect to the control of tuberculosis.

Recommendations:

1. That the Portland City Bureau of Health and the Multnomah County Health Department, in cooperation with our private physicians who have already offered their services gratis, undertake: (a) a continuous immunization campaign against diphtheria and smallpox among school children, in order to reach the children of the many new families who have recently moved or will shortly move into the community; and (b) an immunization campaign against smallpox, and in dangerous areas against typhoid fever, among adult newcomers living in concentrated housing units.

2. That the Portland City Bureau of Health and the Multnomah County Health Department extend their tuberculosis case finding programs, especially among newcomers living in concentrated housing units.

3. That the Portland City Bureau of Health and the

Multnomah County Health Department institute expanded mosquito, fly and rat control programs, particularly in the new housing projects in the vicinity of marshy and slough areas.

4. That the Council of the City of Portland and the Board of Commissioners of Multnomah County take steps to provide, on a matching basis with federal funds available through the Oregon State Board of Health, the money necessary to execute these recommendations.

Contagious Disease Hospital Facilities and Needs

The City of Portland maintains the only hospital facilities for patients with contagious diseases. The facilities of the City Isolation Hospital are available to patients residing in Multnomah County both within and outside the city because it is receiving federal funds for communicable disease control.

The City Isolation Hospital has a capacity of 85 beds which, on the basis of one bed for each 4,000 persons, is reasonably adequate to care for a population of 340,000. With the present estimated population of 450,000, and an anticipated population of 540,000, in the Portland metropolitan area, an additional 50 beds for patients with communicable diseases will be required to meet the ultimate, estimated need.

The present bed capacity of the City Isolation Hospital can be expanded by 32 beds by the completion of three unfinished units and by making provisions to house the staff outside the hospital, thus freeing space now used for living quarters. The additional 18 beds could be provided by the construction of portable units. Because these additional facilities are now partially completed and because the basic administrative, kitchen, laundry and heating services are already available, the necessary increased number of beds available for patients with contagious diseases can be provided most economically by this expansion, rather than by the establishment of completely new facilities at some other location.

Recommendations:

1. That the Council of the City of Portland apply to the appropriate federal agency or agencies, through the Oregon State Board of Health, for funds sufficient to provide for an increase of 32 beds in the capacity of the City Isolation Hospital by the following additions or alterations: (a) the completion of three unfinished units on the first floor; (b) the construction of partitions across certain of the existing 12-bed wards; (c) the construction of portable living quarters for the staff on the grounds outside the hospital; (d) the construction of portable hospital units with a minimum capacity of 18 beds; and (e) the complementary equipment essential to the increased capacity.

2. That the Council of the City of Portland take steps to provide, on a matching basis with federal funds available through the Oregon State Board of Health, the money necessary to supply the additional nursing and other personnel essential to the operation of the City Isolation Hospital at the increased capacity of 50 beds.

General Hospital Facilities and Needs

The present capacity of Portland's private, general hospitals, exclusive of certain unapproved general hospitals, certain hospitals maintained by physicians for their own exclusive use and convalescent homes, is as follows:

Hospital	*Beds*
Robert C. Coffey Memorial Hospital	75
Emanuel Hospital	360
Good Samaritan Hospital	365
Hahnemann Hospital	75
Portland Sanitarium and Hospital	145
Providence Hospital	190
St. Vincent Hospital	405
Total	1615

On the basis of a population of 450,000 in the Portland metropolitan area, existing general hospital facilities provide one bed to each 278 persons, as compared with one bed to each 322 persons, which is the ratio for the entire United States.

On the present basis of one bed to each 278 persons in the Portland metropolitan area, an increase in population of 90,000 people would require 324 additional beds.

Bed Expansion Under Way or Readily Possible within Existing Private, General Hospitals

Existing private, general hospitals already have under way or can readily accomplish permanent bed expansion as follows:

Hospital	*Bed Expansion*
Robert C. Coffey Memorial Hospital	*47
Emanuel Hospital	10
Good Samaritan Hospital	65
Hahnemann Hospital	70
Portland Sanitarium and Hospital	10
Providence Hospital	80
St. Vincent Hospital	15
Total	307

*Twelve beds in Coffey Hospital plus 35 beds in adjoining Lovejoy Hospital which can be physically joined with minor construction work.

In addition to this expansion in private hospitals, Doernbecher Memorial Hospital for Children can add at least 10 beds for children. Also, at Multnomah County Hospital, 20 maternity beds not now in use and probably at least 15 general beds could be made available, if the prohibition against the hospitalization of private patients there can be modified. A considerable number of additional beds also could be made available in private general hospitals, if indigent patients for whose care the city assumes responsibility were cared for in the Multnomah County Hospital rather than in the private, general hospitals.

Possible Additional Bed Expansion in Existing Private General Hospitals

Two major additional increases in bed capacity can be made in existing private general hospitals. The first of these possibilities is the original Emanuel Hospital which is now used as a nurses' home. This building, which is physically joined to the new Emanuel Hospital and served by its central facilities, has a capacity of 70 beds. This building could readily be made available for hospital use by providing temporary dormitories on the hospital grounds to house the nurses. Funds to construct such dormitories would need to be obtained from outside sources.

The second possibility for additional bed expansion exists at the new Providence Hospital, where one floor of one wing was not completed because certain critical materials could not be obtained. The major items to completion are the construction of walls and the installation of radiators and plumbing fixtures. The estimated expenditure necessary to complete this project, under present increased costs is $17,000, of which the hospital is prepared to provide $8,500 as originally contemplated. The remaining $8,500 would need to be supplied from outside sources. The completion of this project would increase the capacity of the Providence Hospital by 40 beds, or, as an alternative, to assist in meeting the problem of nursing service, 50 additional student nurses could be housed in this newly available space.

Recommendations:

1. That the immediate need for additional hospital beds be met by the expansion of 307 beds within the present hospitals already under way or readily possible.

2. That, if necessary, the Board of Commissioners of Multnomah County undertake the modification of the prohibition against hospitalization of private patients in Multnomah County Hospital and make available to such patients beds not needed for the care of indigent patients.

3. That the Council of the City of Portland undertake to make arrangements with the Board of Commissioners of Multnomah County for hospitalization in Multnomah

County Hospital, rather than in private general hospitals, of indigent patients for whose care the city assumes responsibility, thus making available beds now used in the private, general hospitals.

4. That steps be taken to assist Emanuel Hospital to obtain federal funds for construction of temporary dormitories on the hospital grounds to house its nursing staff, thus making available approximately 70 additional beds in the original Emanuel Hospital.

5. That steps be taken to assist Providence Hospital to obtain federal funds to complete one floor of one wing of the hospital, thus providing space for 40 additional beds or for accommodations for 50 additional student nurses.

The Supply and Utilization of Physicians

In 1940 about 550 physicians were engaged in private practice in the Portland metropolitan area. On the basis of a population of 400,000, there was one physician to each 727 persons.

Since 1940 there has been a net loss of 150 physicians through entry into the military service, death and disability. Therefore, assuming a present population of 450,000, the existing ratio is one physician to each 1,125 persons. If the population should reach the anticipated peak of 540,000, the ratio would become one physician to each 1,350 persons. However, it is anticipated that at least 25 physicians now in private practice will leave for military duty within the next few months. Therefore, the ratio will probably become one physician to each 1,500 persons, which is national minimal standard established by the Procurement and Assignment Service for Physicians as essential to maintain adequate medical care for the civilian population. Having reached this ratio of one physician to each 1,500 persons, which situation will prevail throughout the country, the aim must be to make the best possible use of the available physicians.

At a recent mass meeting of Portland physicians to discuss civilian medical care in war time, it was their unanimous feeling that they should and would meet the problem. It was pointed out that many of the newcomers already located in some of the new housing projects were already receiving medical service from established physicians. Moreover, the physicians adjacent to these projects indicated that they could care for a considerably increased load of patients. A number of downtown physicians are prepared to serve parttime and some are ready to spend fulltime in offices provided in the larger housing projects.

Conclusions and Recommendations:

1. That the twenty-one physicians maintaining offices in the St. Johns, Peninsula, Kenton and adjacent districts, and the thirty physicians residing in these areas, can care for a large part of the increased load.

2. That arrangements be made to have a sufficient number of other established physicians spend parttime or fulltime in offices made available where necessary to serve the larger housing projects.

3. That arrangements be made to have physicians, especially in suburban districts, maintain evening office hours for care of minor ailments, for treatment of which patients do not wish to lose time from their employment.

4. That newcomers in need of a physician be directed to call the Doctors' Official Telephone Exchange maintained by the Multnomah County Medical Society in order to obtain a physician who is engaged in the desired field of practice and is located as near as possible to the patient.

General Recommendations:

1. That some qualified individual be designated to assist in preparing applications to the proper federal agencies, where the use of federal funds is required.

2. That a campaign of publicity designed to acquaint the public with the problems of civilian medical care during wartime be undertaken through the newspapers and radio stations.

U. OF O. MEDICAL SCHOOL

Discussions on many common problems shared by the nation's schools were held at a meeting of the Association of American Colleges in Louisville, Ky. Acting Dean David W. E. Baird attended the meeting. The conference brought out the excellent results accomplished through cooperation of the association, the war manpower commission and selective service. Representatives of selective service expressed great satisfaction over the relationship thus far maintained with U. S. medical schools. Problems still remain for the schools but the next six months should see an important development period in their solution, Dr. Baird believes.

Some Louisville observations:

1. Due to essential needs of medical school faculties and civilian populations, it is likely that the doctor-soldier ratio will be decreased materially as the army grows. One-half of the army objective has been reached. On paper it would appear that there are not enough doctors to keep up the ratio as the army continues its rapid growth.

2. A greater percentage of doctors have gone into the armed forces from medical school faculties than from the profession as a whole.

3. In most medical schools faculties have been depleted to the point where it has been necessary for deans to see that no more "essential" faculty members be released.

4. It is predicted that the freezing of manpower will probably relieve the situation with regard to loss of faculty members, technicians, nurses, administrators, etc. Hospital staffs have also been depleted to the extent that operations are most difficult.

5. If the war continues for any great time it will be necessary to increase student enrollment in medical schools up to 50 per cent, according to predictions of the "informed."

6. Three major problems remain: (a) maintenance of adequate staff; (b) maintenance of adequate premedical supply, (c) financing of medical students.

The association was assured by a representative of selective service that a plan would be worked out to continue the supply of premedical students, now strongly affected in the light of the drafting of 18 and 19 year old students.

Exchange instructors were prominently suggested as a partial solution to the faculty problem.

The government has made $5,000,000 available the past year for loan assistance to technical students. Of this amount $1,500,000 was alloted for medical schools, but nearer $2,500,000 is needed for adequate loans for students,

Dr. Adolph Weinzirl, professor of preventive medicine at the medical school, and Miss Elnora Thomson, head of the department of nursing education, attended the meeting of American Public Health Association in St. Louis the week of October 26.

Doernbecher hospital for children, Multnomah county hospital and the state tuberculosis hospital are all having staff problems. Whereas the problem previously was one of turnover, it has now become one of replacement.

Christmas holiday begins December 23, extending through January 4.

STATE BOARD OF MEDICAL EXAMINERS

State Board examinations will be held in medicine and surgery and osteopathy and surgery January 20-22 at the University of Oregon Medical School Library. The Board will meet regularly at the Board office in the Failing Building, Portland, on Friday, January 22. Routine matters will come before the Board for consideration, including applications for reciprocity.

MEDICAL NOTES

Relief of Nursing and Hospital Shortage. Doctors can materially help the shortage of nurses and other hospital personnel by shortening periods of treatment that need extra charting, such as fluid intake and output, by ordering bathroom privileges and making other attentions more simplified, also by making a hospital stay a business rather than a social holiday. It will aid if the doctor will explain to the patient that many of the nice little extras must be omitted. Special nurses should not be asked for unless they are a real necessity for the patient's immediate condition.

Inoculations and Immunizations should be stressed and urged in all defense areas, even if it is done as public health emergency measure. Do not wait for the emergency to occur. Start now whenever possible. Watch for epidemics, both common and uncommon.

Elizabeth Bishop of Baker County Health Unit will replace R. H. Wilcox, Umatilla County health officer, who has been in the Navy for some weeks. The need in Umatilla County for health work seems to be greater than in Baker County in this time of rapidly changing population. A new building is under construction for the health unit.

A. D. Morrison of Carlton received a fractured ankle and other injuries when a hit and run driver hit him November 10.

August Stark of Albany sustained a fractured leg and bruises when hit by a motorist November 13.

A. E. Bostrom, county health officer of Linn County, reports forty-five crippled children aided by the remedial program recently started.

J. J. Enkelis has been visiting Portland. He was senior medical officer at the recruiting station for seventeen months and last July was sent to foreign service where he has been doing surgery on a casualty transport.

Alfred Heldfond of Portland is a first lieutenant in the Army Air Force.

Allen M. Boyden of Astoria is a captain in the Army. His first location was Ledderman General Hospital.

A. A. Soule of Klamath Falls has changed to a location in Portland for the duration.

T. S. Soine of Newberg became a captain in the Army and left for Fort Douglas, Utah.

OBITUARIES

Dr. Walter W. Looney, age 67, died September 14 in Salem. He was on the medical staff of the state hospital for twenty-five years. He was a veteran of the last war and a native Oregonian.

Dr. Ernest N. Crockett, age 79 years, died September 26. He was in the Portland Health Department until his retirement two years ago, commencing at the end of World War I. During the war he was stationed in Fort Seward, Alaska.

Dr. Frank A. Paden, age 67 years, died October 9 after a few days' illness. He had practiced in Brownsville thirteen years.

Dr. Francis P. Adams, age 85 years, died October 14 from coronary thrombosis. He practiced medicine sixty-four years, twenty-nine years of that time in Oregon. His last twelve years were spent in Dufur.

Dr. Ernest H. Street, age 56 years, died November 6. He graduated from Jefferson Medical School and since then practiced in Portland. In World War I he organized and trained the 363rd ambulance corps, the first sanitary train to leave from Oregon.

Dr. Mysta A. Hendricks, age 60 years, dropped dead in a Salem store October 29. She graduated from Willamette Medical College in 1907.

PRINCIPLES OF AUSTRALIAN NURSE'S TREATMENT FOR INFANTILE PARALYSIS APPLIED TO BONE AND JOINT INJURIES BY ARMY SURGEON

The disabilities resulting from such injuries as strains or fractures involving the internal structures of the knee joint can be greatly reduced by use of the Kenny treatment, developed by the Australian nurse, Miss Elizabeth Kenny, for infantile paralysis, Vernon L. Hart, M.D., Major, M. C., U. S. Army, Camp Cooke, Calif., declares in *The Journal of the American Medical Association* for November 21. This is the first reported instance of the application of the Kenny method to any other condition.

"I have selceted the various internal derangement injuries of the knee joint for consideration in this paper," Major Hart says, "however, any bone or joint injury could be presented to demonstrate the importance of the application of the Kenny principles . . . Following an injury to a knee joint one can demonstrate muscle spasm, mental alienation of muscle and incoordination of muscle function. These are the three cardinal attributes in the stages of poliomyelitis which Miss Kenny recognizes and treats.

"I have been impressed with the unusually high percentage of normal knees following this system of treatment and the extremely small number of patients with recurrence of disability. This program of treatment diminishes the original period of disability, eliminates the use of all plaster splints and other forms of mechanical appliances, reduces the necessity for surgical correction of knee joint disability as compared with other methods of treatment that I have used."

Season's Greetings

On behalf of the Officers and Board of Trustees of the Washington State Medical Association I desire to extend cordial Season's Greetings to all members of the profession who are serving in this time of war at home and in the Armed Forces; and to the members of the Auxiliary who are so ably assisting in the national emergency.

A Merry Christmas and a Happy New Year to all.

Albert P. Duryee, M.D., *President*

WASHINGTON STATE MEDICAL ASSOCIATION

At a meeting of the Board of Trustees, held at Seattle, November 28, the following officers and committees were appointed for the ensuing year:

OFFICERS

President, Albert P. Duryee, Everett
President-Elect, Vernon W. Spickard, Seattle
Vice-President, Herbert E. Coe, Seattle
Secretary-Treasurer, Albert J. Bowles, Seattle
Ass't. Sec.-Treas., Bernard P. Mullen, Seattle
Speaker, House of Delegates, Wilmot D. Read, Tacoma

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John H. O'Shea, Spokane
Raymond L. Zech, Seattle
Wilmot D. Read, Tacoma
Homer D. Dudley, Seattle
George H. Anderson, Spokane
Joseph E. Bittner, Jr., Yakima
Carroll L. Smith, Spokane
William S. H. Tousey, Spokane
George R. Marshall, Seattle
John F. Christensen, Kelso
Milton P. Graham, Aberdeen
Warren B. Penney, Tacoma

COMITTEE ON MEDICAL DEFENSE

Homer D. Dudley, Seattle, Chairman
J. Reid Morrison, Bellingham
George W. Cornett, Yakima
Carroll L. Smith, Spokane
Wilmot D. Read, Tacoma

DELEGATES TO A.M.A.

Raymond L. Zech, Seattle
Frank H. Douglass, Seattle (Alternate)
John H. O'Shea, Spokane
Donald G. Corbett, Spokane (Alternate)

COMMITTEES

(Note: President Duryee is ex officio member of all Committees).

Diabetes

Lester J. Palmer, Seattle, Chairman
Paul J. Lewis, Tacoma
Warren B. Penney, Tacoma
Lyle A. Greenwood, Bellingham
George H. Anderson, Spokane
George D. Capaccio, Seattle

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Raymond L. Zech, Seattle, Chairman
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Finance

Vernon W. Spickard, Seattle, Chairman
Allison T. Wanamaker, Seattle
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Graduate Medical Education and Hospitals

Homer D. Dudley, Seattle, Chairman
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Industrial Insurance and Health

Harold E. Nichols, Seattle, Chairman
James H. Mathews, Seattle
Ira O. McLemore, Seattle
Ralph C. Schaeffer, Tacoma
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Maternal and Child Welfare

Henry H. Skinner, Yakima, Chairman
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Richard S. Mitchell, Wenatchee
Philip C. Kyle, Tacoma
Herbert E. Coe, Seattle
Darcy M. Dayton, Tacoma

Gordon G. Thompson, Seattle
Herbert L. Moon, White Salmon
Clarence L. Lyon, Spokane
Robert N. Hamblen, Spokane

Medical Economics

Joseph E. Bittner, Jr., Yakima, Chairman
Carl B. Cone, Vancouver
Elijah C. Leach, Arlington

Neoplastic

George W. Cornett, Yakima, Chairman
Charles B. Ward, Seattle
Earl I. L. Cilley, Bellingham
Donald V. Trueblood, Seattle
James T. Rooks, Walla Walla
Alfred L. Balle, Seattle

Northwest Medicine

Herbert E. Coe, Seattle, Chairman
Robert N. Hamblen, Spokane
Siegfried F. Herrmann, Tacoma

Public Health and Sanitation

Donald G. Evans, Seattle, Chairman
Byron F. Francis, Seattle
Carl J. Johannesson, Walla Walla

Public Laws

Warren B. Penney, Tacoma, Chairman
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George R. Marshall, Seattle, ex officio
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John H. O'Shea, Spokane
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Resettlement

Wilmot D. Read, Tacoma, Chairman
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J. Reid Morrison, Bellingham
David J. Lawson, Mt. Vernon
Joseph L. Greenwell, Pasco
Cecil C. Miller, Wenatchee
James T. Rooks, Walla Walla

Scientific Work

Albert P. Duryee, Everett, Chairman
Raymond L. Zech, Seattle
Roscoe E. Mosiman, Seattle
Siegfried F. Herrmann, Tacoma
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Social Hygiene

W. Ray Jones, Seattle

Tuberculosis

Byron F. Francis, Seattle, Chairman
John E. Nelson, Seattle
Leslie P. Anderson, Elma
Seth L. Cox, Seattle
Frederick B. Exner, Seattle
Ross E. McPhail, Lakeside
Frank S. Miller, Spokane
Robert M. Stith, Seattle
Cedric Northrup, Seattle
Howard L. Hull, Yakima
John F. Steele, Tacoma
Kenneth M. Soderstrom, Seattle

PRIORITY FOR AIRPLANE TRAVEL

Members of the medical profession may be given air priority for emergency trips on life and death matters, according to word received from Willis Camp, district traffic manager of United Air Lines in Seattle. If circumstances justify, a class five priority may be granted, even though the emergency operation to be performed is not directly related to the war effort.

Camp said a regional priority control office has been opened in Seattle by the Army Air Transport Command to serve air transport priority needs of everyone in this region. Persons and shipments of cargo by air entitled to priority when such transportation is directly related to the war effort of the nation or is on an emergency basis.

The regional priority control office is located in the Dexter-Horton Building, Seattle, Washington, telephone Elliott 8122, and is open from 8:00 a.m. until midnight; Sundays from 9:00 a.m. to 5:00 p.m.

MEDICAL NOTES

Election Disappointments. Recent elections in Seattle were a severe disappointment to the medical profession. The 3-mill civilian defense levy, which it was hoped would raise $785,000 to carry out the Civilian Defense Program and related activities, was severely beaten. Similarly, the King County proposition, a 1-mill levy for extension to the hospital system failed to attract enough votes to constitute a favorable election.

Hospital Addition Needed. Commissioner Russel H. Fluent has announced that, despite rejection of the 1-mill levy to raise a sponsoring fund, some way will be sought to construct a 200-bed addition to King County Hospital in Seattle. The war emergency is said to have made this addition especially necessary. At present the hospital is overcrowded and has little room for emergency cases.

T. R. Flaiz of Wapato has moved his offices to Toppenish, to take over the practice of Dr. Shearer.

Willis E. Smuck has been appointed city health officer for Cle Elum in the absence of J. Harold Brown who has entered the service.

OBITUARIES

Dr. Gardner R. Ridlon, aged 43, Seattle, dropped dead as he left his car November 1. He was born in Gorham, N. H. He graduated from Dartmouth College and received his medical degree from Columbia University College of Physicians and Surgeons in 1925. After serving internship and urologic residency in Bellevue Hospital, New York, he located in Seattle in 1928. He was well recognized througout the Pacific Northwest for his work in urology.

Dr. William J. Jones, age 55 years, died in a Tacoma hospital October 25. He had been in failing health the past seven years. He graduated from Oregon University Medical School in 1915. He interned at the old King County Hospital in Georgetown. He was a first lieutenant in World War I. Following the war he practiced in Seattle and was King County coroner from 1926 to 1934.

Dr. Walter L. Ellis, aged 62 years, died at his Vashon Island home, September, 1928.

Dr. Belle H. Baldwin, early pioneer physician and surgeon, died in a Seattle hospital September 31. She practiced in Seattle prior to 1895. Her father, Dr. Edward L. Smith, was the first president of Washington Medical Society while the state was still a territory.

Dr. Orvis L. W. Hall, aged 82 years, one of Idaho's pioneer physicians, died September 9. He was a practicing physician for sixty-three years, being located the last fifty-one years at Star.

Dr. Lee Clanton, practitioner in the Rockford area the past thirty-five years, expired October 21 at the age of 63. He was found dead in his car while on a hunting trip.

SOCIETY MEETINGS

COWLITZ COUNTY MEDICAL SOCIETY

A regular dinner meeting was held at Longview, November 18. Horace Whitacre of Tacoma, now chief surgical consultant of Department of Labor and Industries, gave a most interesting talk on "Rehabilitation of the Injured Workman." He discussed diagnosis and treatment of various fractures and injuries, explaining many newer methods of treatment to hasten recovery. The paper was thoroughly discussed by the society members. Dr. Whitacre explained the new set-up in the Department, whereby physicians have been appointed as consultants in various sections of the state in order to help clear up many difficulties doctors have previously had with the Department.

A committee from the Longview High School board requested that the Society consider appointment of a full-time physician for the local school district. A motion was passed to make further investigation before giving approval.

The Auxiliary met the same evening at the home of Mrs. J. L. Norris. Mrs. J. F. Christensen gave a book review on "Valley of Decision" by Maria Davenport. A discussion was held on contemplated blood bank for this district.

PIERCE COUNTY MEDICAL SOCIETY

The regular monthly meeting of Pierce County Medical Society was held in the Medical Arts Building, Tacoma, November 24 with Clyde Magill in the chair. Minutes of the previous meeting wre read and approved.

The scientific program consisted of two papers. K. M. Soderstrom of Seattle spoke on "Silicosis" and R. D. Wright's subject was "Pectenosis." Discussion was by Drs. Herrmann and Ootkin.

WALLA WALLA VALLEY MEDICAL SOCIETY

A regular meeting of Walla Walla Valley Medical Society was held at Grand Hotel, Walla Walla, November 12.

W. K. Livingston, Professor of Surgery, University of Oregon Medical School, read a paper on "Vascular Diseases." It was practical and simple. In discussion it was duly emphasized by presentation of two cases of vascular disease from the Veterans' Hospital. A very fine motion picture on "Peptic Ulcer" was presented under direction of the Department of Gastroenterology of the Lahey Clinic, Boston, and shown through the courtesy of John Wyeth & Brother, Inc.

Captain Herman C. Boughton of the Air Base Hospital discussed "Surgical Aspects of Peptic Ulcer," and Dr. Ernest M. Tapp of the Veterans Administration discussed "Medical Aspects of Peptic Ulcer."

IDAHO STATE MEDICAL ASSOCIATION **FIFTY-FIRST ANNUAL MEETING, 1943**

IDAHO STATE MEDICAL ASSOCIATION

PROCEEDINGS OF THE FIFTIETH ANNUAL MEETING OF IDAHO STATE MEDICAL ASSOCIATION, SEPT. 17-19, 1942

HOUSE OF DELEGATES

First Session

September 16, 9 p.m.

The first order of business was the seating of delegates. The following delegates and alternate were present:

J. T. Wood, Coeur d'Alene; H. B. Woolley, Idaho Falls; H. L. Schiess, Shelley; B. M. Loehr, Moscow; R. T. Hopkins, Orofino; C. W. Pond, Pocatello; D. C. Ray, Pocatello; W. F. Howard, Pocatello; L. M. Kelly, Burley; G. C. Halley, Twin Falls; M. J. Fuendeling, Twin Falls; Parley Nelson, Rexburg; Glenn McCaffery, Kellogg; O. S. Kellogg, Nampa; Frank Sprague, Boise; A. C. Jones, Boise; Paul Ellis, Wallace; F. B. Jeppeson, Boise.

The minutes of the 1941 meeting were read and approved.

PRESIDENT'S ADDRESS

PARTICIPATION IN WAR SERVICE

Paul M. Ellis, M.D.

WALLACE, IDA.

This is the fiftieth meeting of Idaho State Medical Association. While it is not strictly an anniversary celebration, the Association having held its first meeting September 12, 1893, probably this will be the nearest possible date to our actual anniversary. Many of the plans laid over a year ago to celebrate the beginning of our fiftieth year have had to be abandoned. We have many reasons to be proud of our record.

One year of preparation for war and more months of actual warfare have given us many an opportunity to reflect on our record in the past, and on what is to be expected of us in the future. Our society has grown from 29 members to over 350. We have labored together with the A. M. A. to improve the standards of medical education and practice and to improve hospital facilities and standards. We have worked individually and collectively to expose frauds, quackery and nostrums. The standards of medicine in the United States and the health of the population are the world's best. The report of the statisticians of the Metropolitan Life Insurance Company quoted in the *Journal of the American Medical Association,* states that a force of 2,800,000 men, equal in number to the entire draft army of 1917-1918, has been made possible by better health conditions and the remarkable advances in medical sciences since 1900.

Statistics revealed by the selective service organization show that we still have much to accomplish. The active participation of our Nation in what promises to be a long and cruel struggle has brought a challenge to our profession to accomplishment, much of which has never been equalled. We have accepted it and, if we are able to produce the personnel and adequately take care of the demands made upon medicine by the needs of the Armed Forces at home and abroad, we will no doubt have solved many of the problems which have so deviled us during the past decade.

During recent years we have opposed attempts and suggestions by reformers in the central government to regiment the medical profession. We have been persecuted and prosecuted; more especially have we been condemned for conditions largely economic which have never been solved by anyone.

Almost two years ago the American Medical Association began to lay the foundation for the Procurement and Assignment Service. After expenditure of a great deal of our money in surveys and card index systems, nothing much was accomplished until December seventh. In April of this year it was ready to function. Many of us, as professional individuals, may feel that a better way could have been found. Many of the citizens of our Nation feel that our own Government has not yet met its responsibilities in preparing us for the struggle we have entered.

As loyal Americans we are behind our Government. Every citizen is not doing his part in our effort. Every physician is not wholly behind the American Medical Association. The two are comparable democracies. The delegates to each Congress are elected in much the same manner; however, the President of the Medical Association is not in any manner invested with the powers comparable to those of our National Executive. The ways of democracies are slow. Yet we are giving our sons, our money and our blood in defense of democracy. We have only ourselves to blame as individuals if our National Congress does not measure up to our standards. Again, we as individuals are to blame if we do not join and take an actual part in our local and state medical societies which are the states of the American Medical Association. Only one immediate goal lies before us as citizens and physicians—winning the war. Our part as physicians is doing the same job we have been doing under multiplied difficulties.

At the last of August approximately 28 per cent of the physicians in Idaho were serving in the Army and Navy. This percentage is not of those under 55 but of the whole. About half of a similar number have been rejected after volunteering, because of physical defects. It may be expected that every physician 45 years and under may be called into service in the next year. This does not mean that in communities served by those of military age every individual will be called; every effort is being made to make the selection so that adequate medical care will be available to the civilian population. Every effort is being made to make this selection in a fair and unbiased manner. Our colleagues charged with this duty of selection have a tremendous and unenviable responsibility. They realize it, and we must give them our confidence and complete cooperation.

We will have very few replacements in our ranks from recent graduates. Medical education has been streamlined to give practically every graduate to our armed forces.

Many who have limited their practices to specialties will be called upon to do general practice where possible. Many in the older age brackets. who have shifted many duties to younger hands and who no doubt have shared dreams of weeks in warmer climates in winter and weeks at ocean side or lakes in summer, will be forced to stay in the harness. Some will break under the strain. The shortage of nurses, technicians and other hospital and office workers will make service more difficult to provide. We have no choice; we must do our utmost.

Every facility that we as an organized profession have developed must be brought to its full usefulness. It is my firm belief that each component society and the state association, decreased as its active membership will be, should if necessary constitute itself as a committee of the whole to study and plan for the care of those in communities where physicians have been called to service, to provide relief for each other during illness and short vacations. Every group should give serious heed to the study of medical economics, medical legislation and public relations.

The committees on medical economics and public relations should be given as important a place in every program and in every discussion as those dealing with the scientific side of medicine. We should pay as much or more attention to our local and state elections as we do in our own small groups.

By carefully guarding our organizations, by making use of every facility we have and may develop, by conscientious and unselfish individual and collective effort, we can accomplish every task. We can do our part in winning the war, in providing medical care to everyone. We can keep our enviable record in the vanguard of the world's medicine, and the man who provides the medical care at home may well be as much of a hero as his brother in uniform.

I wish to thank you for the honor which you have given me. It has afforded me many opportunities to study the needs of our profession; it has given me many moments of pleasure in meeting with you at various times. I wish that each of you could be given the opportunity of holding this office for a year. I am sure that, if you could do so, each of you would be as convinced of the necessity of close organization and cooperation as I have been.

Let us keep each component society and our state association intact and let us support it and use it to solve our problems, for when the millions of men in the armed services return, bringing with them 60,000 to 80,000 physicians, a tremendous readjustment must take place. We must be prepared. If we as a profession cannot offer a solution then, we have no alternative but to accept whatever is forced upon us.

The following committees were appointed by President Ellis:

Nominating Committee
S. M. Poindexter, Chairman; D. C. Ray, J. Wood.

Resolutions Committee
E. N. Roberts, Chairman: Glenn McCaffery,
W. O. Clark, L. E. Kelly.

Committee for Next Year's Meeting Place
C. W. Pond, Chairman; D. M. Loehr, F. M. Sprague.

The following letter was read by the secretary:

University Of Idaho
Pocatello, August 30, 1942

Dr. F. B. Jeppesen
Secretary-Treasurer, I. S. M. A.
Boise, Idaho

Dear Doctor Jeppesen:

I am writing at the suggestion of Dr. P. M. Ellis with reference to a measure in which the Idaho Congress of Parents and Teachers is interested. Dr. Ellis suggests that I file with you the following resolution, to be submitted to the House of Delegates for approval:

Resolved: That the Idaho State Medical Association give its wholehearted and unqualified support to the bills for premarital and prenatal control of syphilis which are to be sponsored by the State Department of Health before the 1943 session of the legislature.

Dr. Ellis, in his letter to Mrs. Eldora J. Maughan, President of the Idaho Congress of Parents and Teachers, stated that I might be called to speak on this measure before the House of Delegates. I am spending my summer vacation in California, and am planning to be back in Pocatello on September 9. I assume that this will get me back in sufficient time to attend the meeting. If not, I would like to be notified at my Los Angeles address, 2006 Kelton Avenue.

The Idaho Congress of Parents and Teachers is keenly interested in this premarital and prenatal legislation, and feel that it is especially necessary at this time. We believe that the cooperation of the State Medical Association is crucial in this matter, and we are hopeful that it will be forthcoming.

Oscar Kaplan, Ph.D.
State Chairman for Mental and Social Hygiene, I.C.P.T.

A. C. Jones opened a discussion on the question of paying state renewal license fees for the men in the army. This was discussed by Drs. Pond and Kellogg. Dr. Jones moved that we go on record as favoring waiving this fee. Referred to the Legislative Committee.

There was a discussion of paying the renewal of license fees by the state medical association but nothing was done.

Dr. Ellis discussed a resolution which Dr. Robins brought up last year. He explained the reason why the fees for taking care of industrial cases had to be raised.

There being no further business, the meeting was adjourned.

COUNCIL MEETING

First Session

September 16, 10 p.m.

Those present were as follows: Paul Ellis, A. C. Jones, George Kellogg.

The financial statement of the secretary-treasurer was examined and it was recommended that it be accepted by the House of Delegates.

HOUSE OF DELEGATES

Second Session

September 18, 7:30 a.m.

The following delegates and alternates were present.

J. T. Wood, Coeur d'Alene; W. R. West, Idaho Falls; H. D, Spencer, Idaho Falls; D. M. Loehr, Lewiston; C. W. Pond, Pocatello; D. C. Ray, Pocatello; G. C. Halley, Twin Falls; M. J. Fuendeling, Twin Falls; J. F. Coughlin, Twin Falls; W. F. Passer, Twin Falls; Parley Nelson, Rexburg; T. A. Ellison, St. Anthony; Glenn McCaffery, Kellogg; O. A. Kellogg, Nampa; A. C. Jones, Boise; L. E. Jewell, Meridian; F. M. Sprague, Boise; A. M. Popma, Boise.

The financial statement was read by the secretary-treasurer and is as follows:

BALANCE SHEET

ASSETS		
Cash in checking account	$2,203.00	
Savings	600.00	
Total Cash		$2,803.00
Postal Savings Bonds (Par value 15,000.00)		11,250.00
Office Equipment	244.25	
Less Reserve for Depreciation	113.29	130.96
		14,183.96
LIABILITIES RESERVE AND SURPLUS		
Due Local Societies	34.00	
Northwest Medicine	218.00	
Idaho Medical Foundation	11,250.00	11,502.00
Surplus		2,681.96
Total Liabilities Reserves and Surplus		14,183.96

MEMBERSHIP

Paid Membership	241
Honorary Membership	55
Doctors in Service	62

STATEMENT OF RECEIPTS & DISBURSEMENTS

November 1, 1941 *to September* 1, 1942

RECEIPTS		
General Fund Dues	2,410.00	
Local Society Dues	364.00	
Northwest Medicine	476.00	
Scientific Display	60.00	3,316.00
Opening Balance Nov. 1		1,250.22
		4,566.22
DISBURSEMENTS		
Convention Expense	42.28	
Legal & Auditing	40.00	
Office Expense	84.00	
Salaries	250.00	
Tel. & Tel	51.88	
Travel Expense	252.11	
Committee Meeting Expense	85.90	
Local Society Refunds	324.00	
Refunds to Doctors in Service	56.00	
Northwest Medicine	515.00	
Printing and Stationery	62.05	1,763.22
Balance on Hand		2,803.00

E. N. Roberts, chairman of the Committee on Industrial Medicine, commented on a circular which was compiled by the Division of Industrial Hygiene of the Idaho Department of Public Health. This was published with the assistance of Dr. W. C. Dreessen, U. S. Public Health Service Physician, and was intended to serve as a guide for physicians who see patients with silicosis.

D. C. Ray of Pocatello discussed legislative matters which will probably come up at the next session of our legislature.

A report was made by George Kellogg on the committee which meets with and advises the Industrial Accident Board. An average of one disputed fee bill is looked over each week by this committee. F. M. Cole asked to be relieved as chairman of this committee because of his work with the Procurement and Assignment Board. The present fee schedule was discussed by John Wood.

The following report was read by Dr. Popma, chairman of the Idaho Division of the American Society for the Control of Cancer:

Report of Cancer Committee

The work of the Cancer Committee during the past year has to a large extent been a continuation of the previous year's work. Two of its members were called into the service, leaving your chairman. The latter has been greatly assisted by the Secretary-Treasurer of the State Association.

Last year the House of Delegates authorized an extensive cancer survey of the state. This work was scheduled to have begun in January. Due, however, to the many unforseen situations created by the war, your committee felt that this work should be postponed until a more favorable time.

A large share of the work has been of an executive nature, dealing with the Women's Field Army for the American Society for Control of Cancer. The chairman of the Cancer Committee is also the Executive Chairman of the Idaho Women's Field Army. Your Committee feels that this organization fills a definite need and its work is meritorious, and respectfully requests that the Idaho State Medical Association will continue to give its moral and financial support as it has in the past. Accompanying this report is a resume of the activities of the Field Army for the past year.

IDAHO DIVISION, WOMEN'S FIELD ARMY

American Society for the Control of Cancer

Summary, Report on Educational, Organization, Enlistment Campaign

Total Literature Distributed—21,900. This included 300 Nurses' Handbooks, "Cancer and Its Care" to hospital training schools, public health units and private nurses; 46

copies of the text book, "Youth Looks at Cancer," to high school and college libraries in 21 communities; approximately 2,900 pamphlets, "The Story of Cancer for High Schools," to students in college and high school biology and science classes; and the usual educational material to the general public "Cancer Facts for Women," "Cancer Facts for Men" etc.

"Choose To Live," Women's Field Army educational film was shown 46 times to an estimated 24,000 people; one print was shown in movie theaters. The theater "trailers" were shown 94 times. The film "Choose To Live" was shown to students at the University of Idaho, Moscow, and Southern Branch at Pocatello, also at Lewiston Normal School, and Coeur d'Alene Junior College, and a number of high schools. State department of public health has recently purchased for our use a new Feld Army film titled, "Enemy X."

Six Radio Stations. Every one in the state carries 21 radio broadcasts (5 to 15 minutes each) given by doctors, Field Army Officers, Nurses, and carried 69 radio "shorts." Newspapers as usual give much space to Field Army news.

Requests For Information came from five states, Idaho, Oregon, Washington, Utah and California.

Sixteen County Captains were active, and were assisted by many workers. Fifty Field Army meetings were held, and the Field Army program was explained at forty meetings of other organizations. Talks on the air and at meetings included 43 by physicians, 46 by nurses, 90 by Field Army officers. The latter do not discuss cancer from the medical or pathologic standpoint, but confine their remarks to Field Army organization, or read talks prepared by the American Society for the Control of Cancer.

1942 Enlistment Funds as of August 31 totaled $1600.84, highest enlistment in our six years of activity, but still far below our state quota of 1 per cent per capita, or about $5,000. Twenty-six counties contributed.

The financial condition of the division is good. At the beginning of our active 1942 campaign, we had a small cash balance on hand, as well as $300 set aside for a special project, if and when such a project is undertaken.

MRS. R. S. STRINGFELLOW,
Director of Publicity

Report of Resolutions Committee

1. A discussion of the National Physicians Comittee was started by Dr. Roberts. He brought up the fact that only 27 doctors from Idaho had contributed to this worthwhile organization. This was also discussed by J. T. Wood and C. W. Pond. Dr. Howard made a motion which was carried that $100 be given to this organization by the Idaho State Medical Association. The House of Delegates also recommended that each member of the state association should contribute at least $5.

2. The resolution which was sent to us by the Idaho Congress of Parents & Teachers was read again. On motion by Dr. Roberts this was referred to the Legislative Committee.

3. A resolution was passed which approved the present policy on chest X-rays of the Idaho Anti-Tuberculosis Association and affiliated County Associations. Below is a summary of the charges:

Group X-raying of Students: Students who react to the tuberculin test are offered a chest X-ray for $1, to those able to pay; free to those unable to pay this fee. Remainder of the cost is borne by the Tuberculosis Association. Same arrangements applies to follow-up X-rays on these individuals.

X-Rays for Adults, Tbs. Suspects, Contacts, Patients, etc.: X-rays furnished by the Tuberculosis Association at a cost of $1 to $2.50 for those able to pay something (but who cannot afford the regular cost of a chest film), according to their ability to pay. X-rays are given free of charge to completely indigent cases.

Financial Arrangements with Hospitals and Physicians Making Films:

1. Tuberculosis Association pays $1 for taking of each film and furnishes X-ray plates; or
2. Pays $2 flat fee for each film.

A written report of each chest X-ray is made available, without charge, by the Tuberculosis Association.

E. R. ROBERTS, *Chairman*

Report of Nominating Committee

President-elect, Parley Nelson, Rexburg.
Secretary-Treasurer, F. B. Jeppesen, Boise.
Councilor to replace Dr. Beymer, G. C. Halley, Twin Falls.
Councilor to succeed W. O. Clark, W. O. Clark, Lewiston.
Delegate to A.M.A., E. N. Roberts; Alternate, F. B. Jeppesen.
Successor to A. Barclay as associate editor of Northwest Medicine, C. A. Robins, St. Maries.

MEETING OF NEW COUNCIL

September 19,

The following comittees were appointed by President Kellogg:

Program Committee: A. M. Popma, Chairman; C. W. Pond, J. W. Marshall.

Anti-Tuberculosis: O. F. Swindell, Chairman; F. E. Barret, H. E. Bonebrake.

Arrangements Committee: S. M. Poindexter, Chairman; P. M. Ellis, E. V. Simison.

National Defense: F. M. Cole, Chairman.

Industrial Medicine: E. N. Roberts, Chairman; J. T. Wood, T. A. Ellison, Glenn McCaffery, R. T. Hopkins.

Insurance Board: M. T. Smith, Chairman; W. A. Koelsch, G. O. A. Kellogg.

Legislation: J. L. Stewart, Chairman; D. C. Ray, H. P. Belknap, C. A. Robins, R. T. Hopkins, J. D. Shinnick.

Public Relations: E. L. Berry, Chairman; E. Curtis.

Maternal Welfare: Ruth J. Raattama, Chairman; E. Curtis, H. E. Dedman.

BOOK REVIEWS

THE PRINCIPLES AND PRACTICE OF MEDICINE. Originally written by Sir William Osler, Bart., M.D., F.R.C.P., F.R.S. Designed for the Use of Practitioners and Students of Medicine. By Henry A. Christian, A.M., M.D., LL.D., Hon. Sc.D., Hon. F.R.C.P., (Can.), F.A.C.P., Hersey Professor of the Theory and Practice of Physic, Emeritus, Harvard University, etc. Fourteenth Semicentennial (1892-1942) Edition. 1475 pp, $9.50. D. Appleton-Century Company, Inc., New York, London, 1942.

For half a century Osler's Practice of Medicine has been recognized as a standard authority, due to his outstanding leadership. In this edition there is rearrangement and much that is new, which has been added only after experience has indicated that it is worthwhile. The editor believes that newness alone does not justify publication unless its value has been demonstrated by the experienced clinician. This edition has been so organized that important new material will be quickly incorporated, so that there will be in the future not occasional, but frequent, new editions of the text.

This issue retains for the most part the substance of previous editions and brings the various subjects up to date. Particularly is this true in regard to chemotherapy. Especially interesting is the introduction. This section calls attention of the medical student and interne to the fact that a large proportion of office cases have no organic pathologic lesions. Functional aspects considered under psychomatic medicine are presented in the introductory chapters.

The role of bacteria, viruses and protozoa in causation of disease is indicated by devotion of about one-third of the volume to the numerous ailments induced by them. Then follow considerations of diseases of different organs, presented in the attractive and instructive style for which the original writer was famous and maintained by the present author. There are abundant references attached to many subjects that may be utilized to amplify the text. No single volume offers more information than this on the practice of medicine.

K. E. Hynes

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S. (Eng.), Surgeon, Royal Northern Hospital, London, etc. Eighth Edition, Revised. With 455 Illustrations, a Number of Which Are in Color. 336 pp., $7. The Williams & Wilkins Co., Baltimore, 1942.

It is often deplored that a growing tendency is observed to place undue reliance upon laboratory and other auxiliary reports for diagnosis. It might be that without these aids the future doctor would be unable to formulate a correct diagnosis. "The history and physical methods of examination must always remain the main channels by which the diagnosis is made." This volume is based upon these principles. Each of its thirty-one chapters is devoted to development of details essential for diagnosis of disease of one organ or a group of allied organs. An outstanding feature of the book is the wealth of illustrations. These are so well chosen and presented that the reader can often visualize the disease by studying them. A notable feature is brevity in description of a given diagnosis, only essential facts being mentioned. As a handy aid in surgical diagnosis this book is to be commended.

Sulfanilamide and Related Compounds in General Practice. By Wesley W. Spink, M.D., F.A.C.P., Associate Professor of Medicine, University of Minnesota Medical School. Second Edition. 374 pp., $3. The Year Book Publishers, Inc., Chicago, Illinois, 1942.

The astonishing results obtained from sulfonamide therapy have proved a fascination to all practitioners. The author relates the results of his own observations of some 2000 patients treated at the University of Minnesota hospitals. The proper use of these drugs depends often on identification of the etiologic agent; therefore, stress has been laid on the bacteriology and immunology of infections amenable to sulfonamide therapy. The author emphasizes the difficulty of presenting a concise and comprehensive survey of this form of therapy. Some of the questions which he attempts to answer pertain to compounds available, indications for using one in preference to another, the proper dosage, precautions to be observed in their use. There are chapters on treatment of streptococcic, staphyloccic and upper respiratory infections, as well as treatment of meningitis, infections of genitourinary tract, intestinal and other diseases. The author evidently desires to present authorities for his statements and a bibliography is annexed covering fifty-five pages, sufficiently comprehensive to include the bulk of writings on this subject.

First Aid, Surgical and Medical. By Warren H. Cole, F.A.C.S., Professor and Head of the Department of Surgery, University of Illinois College of Medicine, etc., and Charles B. Puestow, B.S., M.S., M.D., Ph.D., F.A.C.S., Associate Professor of Surgery, University of Illinois College of Medicine and Graduate Schcool, etc. 351 pp., $3. D. Appleton-Century Company, Inc., New York and London, 1942.

Although first aid is a necessity in all periods because of industrial development and increase in automobile accidents, the need is always much greater in times of war. The authors believe that the medical student should be familiar with principles of first aid treatment, as well as every practicing physician and surgeon. Although much of the text of this volume consists of considerations of emergencies created by war, it also includes those connected with civilian life. Particular attention is paid to wounds, burns, hemorrhage and shock. It also should be of value to nurses who are expected to be familiar with first aid procedures. There are seventeen contributing authors, each of whom deals with a specific condition. In addition to considering general principles of anatomy and physiology, special attention is called to chapters on transportation of the injured, gas and bomb raids, medical emergencies, the prostrate patient, civilian versus military casualties. Also the customary first aid emergencies are described in detail.

Advances In Pediatrics. Adolph G. DeSanctis, Editor, New York Post Graduate Medical School and Hospital, Columbia University, 306 pp., $4.50. Interscience Publishers, Inc., New York, 1942.

This book is an annual review of pediatric advances instead of abstracts of all the literature. Twelve authors have contributed monographs on subjects of which they are authorities. All the articles are prepared in a simple manner, although too much space is given to some of the rarer conditions, such as "toxoplasmosis," and "electroencephalography." The average practitioner is more interested in the more common conditions. This is probably the only book on pediatrics which does not stress vitamin therapy which is certainly in its favor. The book as a whole is very instructive, although these same articles can be found in current literature.

N. W. Clein

Cabot and Adams Physical Diagnosis. Thirteenth Edition. By F. Dennette Adams, M.D., Instructor in Medicine, Harvard Medical School, etc. 888 pp., $5. The Williams & Wilkins Company, Baltimore, 1942.

In a changing world one looks for security. In medicine security lies in good pathologic interpretation and good physical diagnosis. In this book one has the security of good physical diagnosis. The work is timely and the extent of its backgrounds through the quoted references is astonishing. It is extensively illustrated. It represents the guarded expressions which come out of a large and historic institution, such as the Massachusetts General Hospital. With this book as a reference the physician may feel that he is well guarded for any apporach necessary in the diagnostic field.

C. H. Hofrichter

Advances in Internal Medicine. Editor, I. Murray Steele, M.D., Welfare Hospital, New York University Division, Welfare Island, N. Y. 292 pp., $4.50. Interscience Publishers, Inc., New York, 1942.

This volume includes descriptions by ten contributors dealing with specific subjects, each of whom has made advances in the subject under consideration. Effort has not been made for completeness, but the background of each essay is intended to furnish an understanding of the problem, whose partial solution represents progress. Some of these subjects deal with use of the Miller-Abbott tube in diagnosis and treatment of intestinal disorders, sympathetic nervous control of the peripheral vascular system, choice of sulfonamides in treatment of infection, present trends in the study of epidemic influenza, riboflavin deficiency. Each subject under consideration is elaborated with sufficient detail for comprehensive consideration. Each essay is amplified by a bibliography varying from 25 to 200 references.

First Aid and Bandaging. A Handbook by Arthur D. Belilios, M.B., B.S. (Lond.), D.P.H. (Eng.), and Others. 628 pp., $1.75. The Williams & Wilkins Company, Baltimore, 1942.

This volume is intended particularly for lay instruction and announces that it must be clearly understood that first aid has its limitations, and any attempt at more ambitious treatment may easily prove harmful to the patient. One exercising first aid will find much valuable information in this book. After discussing general principles, there are chapters on the human body and one on the skeleton preceding chapters on fractures. There is even a chapter on first aid in maternity cases, as well as another on the eye, ear and nose. Advice on treatment of hemorrhage and burns should demand attention. Illustrations supplement many of the descriptions.

CLINICAL FORUM

PEDIATRIC PROBLEM

R. A. S. Born August 2, 1932. Entered the hospital July 29, 1942. His family history had no significance.

Present History: He had been sick a week with a diagnosis of pneumonia, but since he was not doing very well he was transferred to the hospital for treatment.

Physical findings: In general appearance he looks to be a very sick boy. Temperature 103.2° by rectum, pulse 124, respiration 20. Pupils react to light a little. Dilated when at rest. Eyes stare as if unseeing, remaining open. Teeth O.K. Tonsils out, though spaces are slightly red. Tongue not much coated. No goiter, no cervicals. Heart rapid, lungs negative. Abdomen flat but not scaphoid. Spleen, liver, kidneys, normal. Bladder extends almost to umbilicus. No inguinals present, nor other glandular enlargement anywhere in the body. No tenderness of abdomen. Skin hot and dry. No muscles are tender on pressure, nor compression. Neck is not stiff. Abdominal reflexes absent, also cremasteric, knee and ankle. Babinski is present. Spinal fluid was found to have 26 mm. pressure. Cell count was 164, polys 44, lymphs 56 per cent. The child is partially comatose; can be aroused, but when spoken to acts as though he were confused. What is your diagnosis and what treatment would you follow or suggest?

COMMENTS ON OBSTETRIC PROBLEM IN OCTOBER ISSUE

First commentator offers these suggestions: In reporting this case the doctor does not state what reason came to his mind in explanation of the nonengagement of the baby's head after thirteen hours of labor; and, more important, why after twenty-nine hours of labor the head was still to be found floating. It is to be conjectured that her family physician ruptured her bag of membranes after the first thirteen hours with the hope that the head would engage. It is obvious that the family physician must have had some difficulty in reaching the membranes since the consultant doctor found only 1 cm. dilatation after twenty-nine hours of regular pain. The first physician should be congratulated on his ability and his successful maneuver in replacing the cord when it prolapsed. It must have been very disheartening to the attendant to find that practically no progress had been made in such a long time and the patient was beginning to present dubious symptoms. However, during the next three hours such definite progress was made, that it is presumed this encouragement led the second physician to follow a conservative course. During this long period she should have been receiving a great deal of fluids (water and fruit juice), also light meals.

After the patient had a chill and her temperature rose, one would naturally conclude that it came from some pelvic complication, ample evidence for which was to be found in the longevity of the labor and little corresponding advance, but the pulse was not recorded, nor were any findings in the lungs reported. The pelvic situation under such circumstances always demands attention to such a degree that one does not sense the necessity of looking elsewhere for possible lesions which arise in blood pressure, pulse and temperature under the conditions as presented would suggest.

It would be best to handle such a case in a conservative manner, supporting the patient with intravenous glucose as well as morphine for rest, at the same time searching for blood donors in order to give a transfusion as much to bolster the strength of the patient as to attempt to save her life and that of her child.

Second commentator holds these views: It is stated in this problem that the exterior pelvic measurements were normal. There are other factors which are quite important. If this woman were a short, dumpy type, weighing 180-200 pounds she would present a delivery problem which would promise a prolonged rather hard labor, especially if the baby happened to be lying R.O.P. and/or was large. If the head was not engaged at the onset of labor, one could deduce that definite dystocia was present. If this woman had been of average weight and average or even a little bit more than average height, with pelvic measurements normal, the likelihood of delivering a baby would be much better than the supposition above.

In view of the fact that after thirteen hours of pain, whether light or hard, and the family physician having ruptured the membrane, then sixteen hours later the head was still unengaged, without knowing any factors in this instance, as an uninterested observer one would feel that some unusual and unobserved, or at least unrecorded dystocia was present. The probability of getting a live baby without damaging the mother a great deal is rather unlikely. Consequently, even though there be some temperature, the best chance to obtain both a live baby and a live mother would be to do a cesarean at this point. Then one must rely on the use of sulfathiazole or one of the sulfonamides, supporting the patient generously with intravenous glucose and transfusions to sustain her general system which has been subjected to so severe an experience.

Conclusion of the case: The last report recorded was that on May 14 at 2 a.m. The patient was exhausted; her temperature was 102°; fetal heart heat 150. She was given morphine for rest. At 1 p.m. the labor was terminated by low forceps, after doing a right mediolateral episiotomy. A stillborn baby weighing nine pounds was delivered. At that time her vaginal discharge had a very foul odor.

Postpartum course was very stormy, complicated by sepsis, acidosis, dehydration and pneumonia. The treatment consisted of transfusion, intravenous fluids, sulfanilamide. gastric suction and nasal oxygen. Six days later the patient expired.

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THE THIRD RECORDED CASE OF INFECTION WITH BACILLUS VIOLACEUS REPORTED

The third recorded case of infection with Bacillus violaceus, a micro-organism found in fresh water in swamps, streams and lakes, is reported by Herbert J. Schattenberg, M.D., and William H. Harris, M.D., New Orleans, in *The Journal of the American Medical Association* for December 13. Considerable skepticism has existed that this organism causes disease in man.

The patient whose case is reported by the two New Orleans physicians died within a week of infection, whereas the 2 patients whose cases had been previously reported survived for nine and fifteen months, respectively. In this third case, the authors say, the patient, a Negro aged 21, was drowsy and incoherent when admitted to the hospital, thus a complete history could not be obtained. His sister said that two days before he was limping on his right foot and that it was thought he had a thorn in it. She said that he had attempted to remove the thorn with his knife and when he rose the next morning he complained of headache and of pain in the right leg. He appeared "feverish" and after a hard chill was brought to the hospital. He died seven days after the onset of symptoms and five days after admission to the hospital. The two physicians say that no other disease or condition was present that could have contributed to the patient's death.

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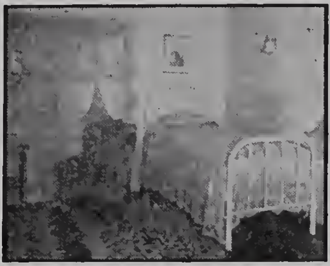

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St. Anthony	St. Anthony

OREGON

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President, C. A. Grant	Secretary, Flora Biswell
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La Grande	Pendleton
Jackson County Society	**Second and Fourth Wednesdays**
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Josephine County Society	
President, C. J. Moser	Secretary, S. B. Osgood
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Lane County Society	**Third Friday**
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Malheur County Society	
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Salem	Independence
Mid-Columbia Society	
President, T. E. Griffith	Secretary, E. N. Smith
The Dalles	The Dalles
Multnomah County Society	**First and Third Wednesday**
President, G. E. Henton	Secretary, John Raaf
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President, J. E. Campbell	Secretary, F. C. Adams
Roseburg	Klamath Falls
Tillamook County Society	
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Cloverdale	Tillamook
Umatilla County Society	
President, C. O. Wainscott	Secretary, T. M. Barber
Pendleton	Pendleton
Union County Society	**Fourth Tuesday**
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La Grande	La Grande
Wallowa County Society	**First Thursday**
President, A. F. Martin	Secretary, E. L. Landers
Enterprise	Joseph
Washington County Society	
President, A. O. Pitman	Secretary, F. J. Kabeiseman
Hillsboro	Hillsboro
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Wenatchee	Cashmere
Clallam County Society	**Second Tuesday—Port Angeles, Sequim**
President, J. C. Hay	Secretary, L. A. Schueler
Port Angeles	Port Angeles
Clark County Society	**First Tuesday—Vancouver**
President, F. L. Dunnavan	Secretary, J. H. Harrison
Vancouver	Vancouver
Cowlitz County Society	**Third Wednesday**
President, R. J. La Rue	Secretary, L. S. Roach
Castle Rock	Kalama
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President, L. L. Goodnow	Secretary, A. W. Riedesel
Aberdeen	Aberdeen
Jefferson County Society	
President, C. M. Schaill	Secretary, R. S. Crist
Port Townsend	Port Townsend
King County Society	**First and Third Mondays—Seattle**
President, I. A. Weichbrodt	Secretary, B. P. Mullen
Seattle	Seattle
Kitsap County Society	**Second Tuesday—Bremerton**
President, Elmer Cornell	Secretary, J. B. Porrter
Bremerton	Port Orchard
Kittitas County Society	**Third Monday—Ellensburg and Cle Elum**
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Roslyn	Cle Elum
Klickitat County Society	
President, R. L. Baker	Secretary, Thomas Meade
White Salmon	Goldendale
Lewis County Society	**Second Monday—Centralia and Chehalis**
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Centralia	Centralia
Lincoln County Society	
President, L. F. Wagner	Secretary, J. E. Anderson
Harrington	Wilbur
Okanogan County Society	
President, T. J. McCain	Secretary, G. E. Stevens
Tonasket	Okanogan
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South Bend	Raymond
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Tacoma	Tacoma
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Sedro Woolley	Sedro Woolley
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Spokane	Spokane
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Thurston-Mason Counties Society	**Fourth Tuesday—Olympia**
President, E. E. Jones	Secretary, J. A. Roe
Olympia	Olympia
Walla Walla Valley Society	**Second Thursday—Walla Walla**
President, E. L. Whitney	Secretary, H. P. Kahler
Walla Walla	Walla Walla
Whatcom County Society	**First Monday—Bellingham**
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Whitman County Society	**First Thursday—Colfax**
President, R. T. Henry	J. L. Gilleland
Colfax	Pullman
Yakima County Society	**Second Monday—Yakima**
President, B. C. Koreski	Secretary, L. S. Harris
Yakima	Yakima

Puget Sound Acad. of Ophthal and Oto-Laryngology	**Third Tuesday—Seattle and Tacoma**
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GYNECOLOGY — Two Weeks Intensive Course will be offered starting April 6th. Clinical and Diagnostic Courses every week.

OBSTETRICS — Two Weeks Intensive Course will be offered starting April 20th. Informal Course every week.

OTOLARYNGOLOGY — Two Weeks Intensive Course will be offered starting April 6th. Clinical and Special Courses starting every week.

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ANNUAL MEETINGS OF MEDICAL SOCIETIES

American Medical Association......June 8-12, 1942—Atlantic City

Idaho State Medical Assn.....September 16-19, 1942—Sun Valley
President, P. M. Ellis, Wallace — Secretary, F. B. Jeppesen, Boise

Oregon State Medical Society............1942
President, W. W. Baum, Salem — Secretary, J. R. Montague, Portland

Washington State Medical Assn......August 17-19, 1942—Spokane
President, G. W. Cornett, Yakima — Secretary, V. W. Spickord, Seattle

American College of Physicians..........April 20-24, 1942—St. Paul

University of Wash. Extension Course...........Suspended for 1942

Pacific Northwest Medical Assn...............1942—Portland

Pacific Coast Oto-Ophthal Society......May 11-14, 1942—Portland
President, I. H. Jones, Los Angeles — Secretary, C. A. Dickey, San Francisco

Pacific Northwest Orthopedic Society......Nov. 15, 1941—Spokane
President, A. O. Adams, Spokane — Secretary, N. R. Brown, Spokane

North Pacific Pediatric Society................January 1942—Spokane
President, H. T. Clay, Tacoma — Secretary, G. O. Matthews, Vancouver, B. C.

Washington State Obstetrical Assn...........April 18, 1942—Seattle
President, R. S. Mitchell, Wenatchee — Secretary, H. H. Skinner, Yakima

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ATHLETE'S FOOT

A mixture of carbolic acid and camphor has been found effective in the treatment of "athlete's foot," Edward Francis, M.D., Washington, D. C., states in *The Journal of the American Medical Association* for December 6.

"The mixture," he says, "is nonirritating to the skin and may be painted between the toes several times a day . . . The sock may be replaced immediately without danger of corrosion. There is no discoloration of the clothing. Relief from itching is immediate . . . It should be pointed out, however, that the phenol-camphor preparation should not be applied to the wet skin since water causes a breakdown of the preparation with the result that it becomes caustic (corrosive)."

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THE "SULFA" DRUGS

In 1937 sulfanilamide became available generally and proved to be extremely useful in the treatment of infections due to B. hemolytic streptococci and meningococci. In addition, the drug soon was being employed in urinary tract infections, trachoma, chancroid, lymphogranuloma venereum and certain cases of gas gangrene, and it demonstrated some benefit in gonorrhea, undulant fever and actinomycosis. Approximately two years later sulfapyridine was being widely used in treatment of pneumococcal infections and was found to be more effective than sulfanilamide against gonococci.

After only another year sulfathiazole began to replace sulfapyridine because it was as effective against pneumococci and gonococci, more effective against staphylococci, and occasioned fewer reactions. In urinary tract infections sulfathiazole was superior to sulfanilamide in most mases. Now sulfadiazine is being introduced and it has the advantage of a lower index of toxicity, which makes possible the maintenance of high blood levels.

This group of drugs has become exceedingly widely employed. Soon there will be only a small proportion of the general population which has not received one of them as treatment of some variety of infection (South. M.J., 34:1214, 1941. It behooves the physician to choose carefully the most specific and least toxic one for his case. A wide variety of dosage forms have been made available by Eli Lilly & Company.

OTHER TREATMENTS FOR ERYSIPELAS MADE OBSOLETE BY SULFONAMIDE DRUGS

The prompt response of erysipelas to sulfanilamide or one of its derivatives made this the treatment of choice and renders other treatment measures obsolete, Robert E. Shank, M.D.; Richard W. Maxwell, M.D., and George S. Bozalis, M.D., St. Louis, declare in *The Journal of the American Medical Association* for December 27 in a report on the results they obtained in so treating 165 patients with this disease.

Erysipelas is a common bacterial infection of the skin caused by the hemolytic streptococcus. It is characterized by intense itching, burning and inflammation of the skin, which is swollen and painful. The condition is contagious. The authors explain that prior to the introduction of sulfanilamide, methods of treating the disease were notably unsatisfactory. Describing the results they obtained with their patients, they say:

"In no instance was the lesion ever seen to spread after the first thirty-six hours on chemotherapy (drug treatment). A small subcutaneous (under the skin) abscess was the only complication. There were no recurrences.

"In 84 patients an elevated admission temperature had returned to normal after twenty-four hours and remained normal. In 16 cases fever persisted over forty-eight hours but in no instance longer than four days.

"Sulfanilamide was found to be fairly toxic, particularly for the aged patients in this series. The new drug sulfabenamide, used experimentally for 34 patients, produced equally good results, without the usual toxic effects so common to the sulfonamide group of drugs . . .

"There were five deaths in the group of 165, a mortality figure of 3 per cent. This compares with mortality rates of from 8 to 12 per cent before the use of sulfanilamide . . . Patients over 60 years of age, with chronic heart and kidney disease, furnished four of the five fatalities among this group."

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Collapse therapy is not a panacea for pulmonary tuberculosis. It is a valuable adjunct when used in conjunction with the time-proven principles now in common practice. Every patient should have the benefit of mature judgment to determine the possibilities of expediting recovery by the use of compression methods. An early diagnosis, however, together with the intelligent selection of therapeutic measures, offers a patient the best chance of recovery. (*C. Howaard Marcy, M.D., Pennsylvania's Health, Dec.*, 1941.)

JAPANESE DEATH RATE

The Japanese death rate is 17.4 per 1,000 as compared to 10 or 11 in the United States. Japan's present death rate, in fact, resembles ours of 1900. Individual causes of death in Japan are about as prevalent now as in this country about 1900. For example, the United States tuberculosis death rate now is 45 per 100,000. In Japan in 1937 the rate was 204, closely resembling our tuberculosis death rate in 1900 of 196. The picture is similar for diarrhea and enteritis. America has more than twice as many men to draw on in the military age group as Japan—25 million men from 20 to 34, as against Japan's 11 million in this age group. (*Science News-Letter, Jan.* 17, 1942.)

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

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Chief indications for Pitocin (alpha-hypophamine) are: medical induction of labor; stimulation of the laggard uterus during labor; prevention and minimizing of postpartum or late puerperal hemorrhage; and of blood loss following cesarean section or curettage. Literature on request.

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ANNUAL MEETINGS OF MEDICAL SOCIETIES

American Medical Association	**June 8-12, 1942—Atlantic City**		
Idaho State Medical Assn.	**September 16-19, 1942—Sun Valley**	President, P. M. Ellis Wallace	Secretary, F. B. Jeppesen Boise
Oregon State Medical Society	**September 9-12, 1942—Corvallis**	President, W. W. Boum Salem	Secretary, J. R. Montague Portland
Washington State Medical Assn.	**August 17-19, 1942—Spokane**	President, G. W. Cornett Yakima	Secretary, V. W. Spickord Seattle
American College of Physicians	**April 20-24, 1942—St. Paul**		
University of Wash. Extension Course	**Suspended for 1942**		
Pacific Northwest Medical Assn.	**June 17-20, 1942—Portland**		
Pacific Coast Oto-Ophthal Society	**May 11-14, 1942—Portland**	President, I. H. Jones Los Angeles	Secretary, C. A. Dickey San Francisco
Pacific Northwest Orthopedic Society	**Nov. 15, 1941—Spokane**	President, A. O. Adams Spokane	Secretary, N. R. Brown Spokane
North Pacific Pediatric Society	**June, 1942**	President, M. L. Bridgeman Portland	Secretary, C. G. Ashley Portland
Washington State Obstetrical Assn.	**April 18, 1942—Seattle**	President, R. S. Mitchell Wenatchee	Secretary, H. H. Skinner Yakima

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BLUE PRINTS FOR BODY BALANCE

The booklet "Blue Prints for Body Balance" was created by the Samuel Higby Camp Institute for Better Posture in collaboration with eminent authorities in the field of orthopedics. It is being offered exclusively to physicians who might desire it for use among patients. Incidentally, it was duly edited and approved at the American Medical Association and the New York Academy of Medicine. Inspiration for the preparation of this booklet stemmed from numerous requests from many physicians. Establishment of the Institute was the outgrowth of this organization's activities in various public health educational efforts and, in particular, the establishment of "National Posture Week" several years ago, which has received an increasing amount of cooperation from physicians, educators and public health groups. As heretofore, much educational material is being distributed to them this year without cost. Quantities of "Blue Prints for Body Balance" will be supplied to physicians upon request by S. H. Camp & Co., Jackson, Mich.

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TREATING COMPLICATION OF BRUCELLOSIS

Spondylitis (inflammation of a vertebra) is probably the most common complicating disorder of the bones and joints referable to undulant fever, also known as brucellosis, George S. Phalen, M.D.; Louis E. Prickman, M.D., and Frank H. Krusen, M.D., Rochester, Minn., point out in *The Journal of the American Medical Association* for March 14 in reporting that physically induced fever was of very definite value in the management of three cases. The three physicians explain, however, that "It is recognized that, even if no special treatment is employed, the prognosis (outlook) as to ultimate healing in brucellosis spondylitis is good. . . ."

They advise that "patients who are farmers, veterinarians, dairymen, butchers, packing house employees and also those who give a history of ingestion of raw milk and present the chief complaint of backache should be suspected of having brucellosis spondylitis if other clinical factors supporting such a suspicion are also present."

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The facilities of the institution are available to physicians who wish to use them for the care of their private patients.

WARNING ON "ATHLETE'S FOOT" TREATMENT

Until the conclusion of studies to determine the extent of the causticity of a mixture of phenol and camphor, recently hailed as "A Working Cure for Athlete's Foot," and its possible benefits and dangers, "treatment of 'athlete's foot,' ringworm and other fungous infections (with this mixture) or any other potent remedies is best intrusted to the qualified physician," *The Journal of the American Medical Association* warns in its May 9 issue. It has been warned that the mixture should not be applied to a wet skin since water has been reported to make it caustic.

Pointing out that most cases of fungous infection require persistent skilful attention if the disease is to be brought under complete control, *The Journal* says that "Recommendation that untrained people use on themselves an agent which has the potential danger of causticity is highly doubtful."

NOW FOR ACTION

Possibly the most significant single action taken by the House of Delegates at the 136th Annual Meeting of the Medical Society of the State of New York was its unequivocal sponsorship of three organizations providing nonprofit medical expense indemnity insurance in this state.

By an overwhelming vote it was resolved "that the Medical Society of the State of New York now officially approve, sponsor, and support in every manner possible the three corporations which have conformed to the principles prescribed by organized medicine for the protection of the interests of both the public and the profession in the organization and operation of medical insurance, namely, The Western New York Medical Plan, Inc., of Buffalo; the Medical and Surgical Care, Inc., of Utica; and the Medical Expense Fund of New York, Inc., of Brooklyn . . . and that notice of this action of the House of Delegates be given to all county medical societies of the State of New York, and that each one be urged to cooperate in every practical manner toward the accomplishment of the successful operation of voluntary nonprofit cash indemnity insurance by these organizations, in order that a system of medical insurance under administrative control of the medical profession shall be developed and maintained."

Speaking at the Conference on Medical Service Plans in Chicago, on February 14, Mr. J. D. Laux, of the Michigan Medical Service, brought out the fact that there were in the United States thirty-three voluntary, nonprofit medical service plans operating in nine states, with a total enrollment in excess of 750,000 subscribers, and that in thirteen other states programs were well organized for the inauguration of medical service plans. This is surely a good beginning based on sound planning, careful financing, and the necessarily slow collection of sufficient actuarial data which, for medical expense prepayment insurance, did not exist until recently. Cumulative experience, however, now seems to justify a more rapid expansion of this type of medical service, at least in the state of New York, in the opinion of the representatives of the medical profession.

However, for all that whole-hearted support of the organized profession can mean to the furtherance of this kind of nonprofit medical service, a great deal remains for each individual physician to do. People must be informed that such prepaid medical service by these three voluntary nonprofit corporations is available, that each individual physician is a potential professional member of one of the corporations, and that the medical profession itself stands squarely behind them to assure the continuity and the quality of the medical service to be rendered the subscribers.

TUBERCULIN TESTING

Tuberculin testing in a secondary school in Canada disclosed that out of 16 pupils who used the school bus 15 reacted positively to tuberculin, and one proved to be in the early stage of tuberculosis when X-ray examination was made. The driver of the bus, when examined, was discovered to be an open case of tuberculosis. Thirteen of the children were the only positive reactors in their respective families. The report of this investigation was made by Dr. William D. Hay to the Canadian Public Health Assn., Dec., 1941. *Can. P. H. Jour.*, Jan., 1942.

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(1) 1939. The Canned Food Reference Manual, American Can Company, New York.
1938. Commercial Fruit and Vegetable Products, Second Edition, W. V. Cruess, McGraw-Hill, New York.
1937. Appertizing or the Art of Canning; Its History and Development, A. W. Bitting, Trade Pressroom, San Francisco.
1936. A Complete Course in Canning, Sixth Edition, Press of "The Canning Trade," Baltimore.

The Seal of Acceptance denotes that the nutritional statements in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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Vacations are too often a vacation from protective foods. For optimum benefits a vacation should furnish optimum nutrition as well as relaxation, yet actually this is the time when many persons go on a spree of refined carbohydrates. Pablum is a food that "goes good" on camping trips and at the same time supplies an abundance of calcium, phosphorus, iron, and vitamins B and G. It can be prepared in a minute, *without cooking*, as a breakfast dish or used as a flour to increase the mineral and vitamin values of staple recipes. Packed dry, Pablum is light to carry, requires no refrigeration. Easy-to-fix Pablum recipes and samples are available to physicians who request them from Mead Johnston & Company, Evansville, Indiana.

TUBERCULOSIS MAINTAINS DOWNWARD TREND

Reports from the Statistical Bureau of the Metropolitan Life Insurance Company indicate that a continuation in the downward trend in the mortality from tuberculosis is especially gratifying, as fears had been expressed in some quarters that the war effort might already have produced an unfavorable reaction in this disease. So far, it appears that the efforts in the control of tuberculosis have continued the long series of successes that carried us through even the depression years. The death rate for tuberculosis in the first quarter of this year is only 42.6 per 100,000, as compared with rates of 56.3 and 72.2 registered five and ten years ago respectively.

The "troublesome weed" will soon harass your patients with contact dermatitis—

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In the *treatment* of ivy poisoning, one or two injections of "Poison Ivy Extract *Lederle*" often give marked relief within a short time.

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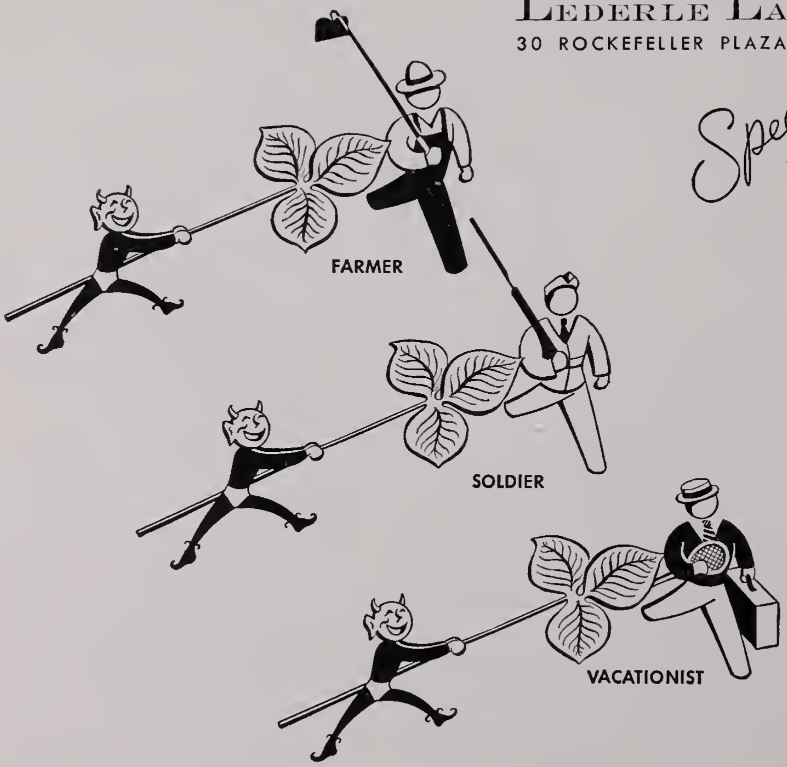

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Sasec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Sasec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to six teaspoonfuls of a thin paste of Casec and water ,given before each nursing, is well indicated for loose stools in breast-fed babies.

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We must keep in mind that tuberculosis is a poor man's disease. It kills seven times as many per hundred thousand among unskilled workers as among the higher paid individuals. It strikes those least prepared to take the blow. That fact in itself is sufficient to make it imperative that the cost come out of the sources other than the victims' meager income. If we expect to finance the war (against tuberculosis) out of the pockets of those found to be suffering from the disease we may as well hoist the white flag. The war cannot be won that way. The public health is the public trust and responsibility and doubly so when the danger comes from a communicable disease. (Matthew Woll, Penna.'s Health., February, 1942.)

Marry and Live Longer. Among industrial policy holders of an insurance company, tuberculosis accounted for 19.1% of all deaths among single males between the ages of 20 to 44, but only for 11.4% of the deaths among the married. The proportion of deaths from tuberculosis is even higher among the widowed, namely, 23.1%. The rates of alcoholism, accidents and syphilis are also higher among the single and widowed than among the married. (Editorial, Med. Record, March, 1942.)

There is eighty times as much tuberculosis found in discharged sanatorium patients as in the unselected population, it is estimated, and thirty times more tuberculosis in the contact group than the general population. (L. M. Morse, M.D., Wis. Med. Jour., March, 1941.)

To help relieve neuritic symptoms of pregnancy

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Mead's Brewers Yeast contains the entire vitamin B complex, including thiamine, riboflavin and nicotinic acid. It may be given in tablet form and/or in powder form. The powder may be quickly shaken up with milk in an ordinary cocktail shaker. It also mixes well with tomato juice or ketchup.

Each Mead's Brewers Yeast Tablet contains not less than .06 mg. thiamine (vitamin B_1), .02 mg. riboflavin (vitamin G), and .15 mg. nicotinic acid, together with other factors of the vitamin B complex commonly occurring in nonviable brewers' yeast.

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Synopsis of Ano-Rectal Diseases. By Louis J. Hirschman, M.D., F.A.C.S. Professor of Proctology, Wayne University, etc. With 182 Text Illustrations and 12 Color Plates. Second Edition. 315 pp. $4.50. The C. V. Mosby Co., St. Louis, 1942.

This is the most concise and understandable book of its kind that the reviewer has ever read. There is no doubt that the rectum is the most neglected part of the human anatomy during a supposedly complete physical examination. The author has had almost unlimited experience in the field of proctology and in this revised synopsis has covered every condition and disease of the rectum in the most practical manner. He has added a chapter on focal infection which is worthy of very sincere consideration. This book is recommended to anyone treating diseases of the rectum.

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ANNUAL MEETINGS OF MEDICAL SOCIETIES

American Medical Association .... **1943 — Cancelled**

Idaho State Medical Assn. .... **1943—Sun Valley**
President, G. O. A. Kellogg, Nampa — Secretary, F. B. Jeppesen, Boise

Oregon State Medical Society .... **1943 — Portland**
President, G. E. Henton, Portland — Secretary, T. D. Robertson, Portland

Washington State Medical Assn. .... **1943 — Spokane**
President, A. P. Duryee, Everett — Seattle
Secretary, A. J. Bowles

American College of Physicians ....

University of Wash. Extension Course **1943**

Pacific Northwest Medical Assn. .... **1943—Spokane**

Pacific Coast Oto-Ophthal Society ....
President, I. H. Jones, Los Angeles — Secretary, C. A. Dickey, San Francisco

Pacific Northwest Orthopedic Society ....
President, A. O. Adams, Spokane — Secretary, N. R. Brown, Spokane

North Pacific Pediatric Society ....
President, M. L. Bridgeman, Portland — Secretary, C. G. Ashley, Portland

Washington State Obstetrical Assn. ....
President, R. S. Mitchell, Wenatchee — Secretary, H. H. Skinner, Yakima

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IMPORTANCE OF THE GENERAL PRACTITIONER

The general practitioner is again taking his rightful place in the practice of medicine — and with a background of study and training that justifies the highest confidence in his ability, John Joseph Nutt, M.D., New York, declares in *Hygeia, the Health Magazine* for November, asserting that "If specialists would accept no patoints except those referred by family physicians it would benefit the patient, the family physician and the specialist.

"The patient would, of necessity, have a physician who would be friend and adviser in all things pertaining to health. The prevention of illness has become a large part of the practice of medicine, and surely this is work for the family physician, who knows his patient from top to toe. He also should be the judge of the good or evil of treatments, drugs, foods, exercise and climates. No matter where he lives, the mose recent advances in science are available to the family doctor through medical journals, circulating medical libraries and medical societies. By consulting him in small matters his patients may often avoid serious consequences. The specialist would be called on to treat conditions which the family physician can treat exactly as well; he would be consulted only for those conditions which come within his special field. The final result would be thinning out of the ranks of specialists—only the really fit surviving—and the return of the family physician to his own."

NORTHWEST MEDICINE

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Attention, Please!

The Army and Navy Need You — Editorial
Civilian Defense — Editorial

Medical Aspects of Industrial Poisons — Behneman
Hyperthyroidism and Neurosis — Lemere and King
Peripheral Vascular Disease — Popkin
Clinical Physiology of Shock — Hynes
The Nature of Allergy — Cohen
Pulmonary Emboli — Bowers
Compound Fractures — Blair
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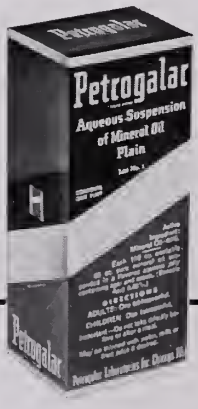

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NORTHWEST MEDICINE

Vol. 41 December, 1942 No. 12

Attention, Please!

Medical Service at Kaiser Shipyards — Oregon Section
Conference of Secretaries and Editors — Editorial
Annual Report of State Meeting — Idaho Section
Four Decades of Publication — Editorial

Silicosis at Coeur d'Alene Mines — Ellis et Al
Actinomycosis of Lung — Atwood
Lower Half Headache — Girling
Surgery of Colon — Stone

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